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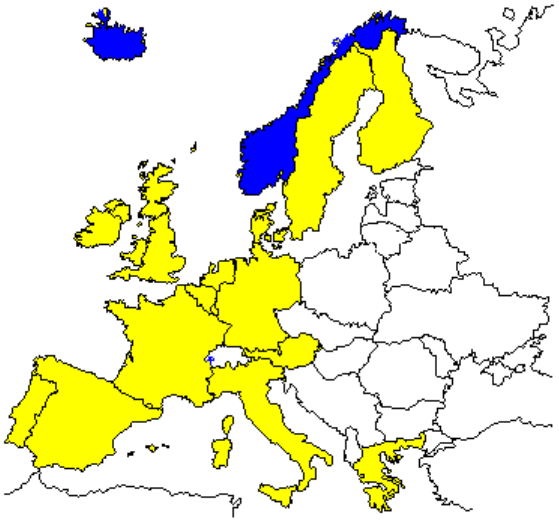
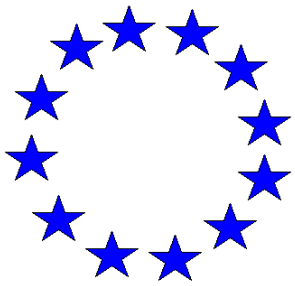


REPORT

PRUDENTIAL SUPERVISION OF INSURANCE UNDERTAKINGS

CONFERENCE OF INSURANCE SUPERVISORY SERVICES OF THE MEMBER STATES OF THE EUROPEAN UNION



CONFERENCE OF THE
INSURANCE SUPERVISORY SERVICES
OF THE MEMBER STATES OF THE
EUROPEAN UNION

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1. EXECUTIVE SUMMARY

1.1 Context and aims

1.1.1 In May 2001 the European Commission began a fundamental review of insurance regulation, the 'Solvency II' project. The EU Insurance Supervisors Conference ('the Conference') was asked to make recommendations for that review, and to that end set up this Working Group of insurance supervisors to look at the practical lessons from the past and to highlight emerging trends in the risks faced by insurance companies.

1.1.2 We[1] met eight times between July 2001 and September 2002.

Goals

1.1.3 We aimed to use our practical experience to understand the risks to solvency of insurance firms and how better to monitor firms' risk management. Specifically, our goals were to:

(a) build on the 1997 Müller report[2] to formulate a more up-to-date picture of the risks that European insurance firms face, and to this end:

- identify and analyse the risks that have led to actual solvency problems between 1996 and 2001, or created a significant threat to the solvency of a firm ('near misses'), including any new and emerging risks; and
- prioritise each risk that has been identified;

(b) evaluate how supervisors might respond to these risks, by looking at:

- how effectively the current solvency system (and its three building blocks of assets, liabilities and capital) has detected in advance firms in difficulty over the last six years;
- how effectively current supervisory tools prevent, detect in advance and cure problems; and
- typical early warning signals, including both quantitative and qualitative factors, and possible new signals.

[1] 'We' and 'us' mean the London Working Group throughout this report.
[2] H Müller et al. (1997) *Solvency of Insurance Undertakings*, Conference of the Insurance Supervisory Services of the Member States of the European Union

Limitations

1.1.4 This report was restricted to events in the last six years. As a result, it may be typical of only part of the prevailing economic and insurance market cycles. The environment for European insurers varied during this period, including falling interest rates and low inflation, a boom in equities and then sharp falls, and Life and Non-life claims inflation. Shareholder attitudes are also changing, with capital shortages and less loyalty to support firms through difficulties. For a more complete picture this report should be read in conjunction with the Müller report.

1.1.5 We looked at the regimes in Europe before publication and implementation in 2002 of the Solvency 1 Directive and the Insurance Groups Directive respectively. Some conclusions will already have been dealt with by changes under those Directives.

1.1.6 This report looks into firms' behaviour and regulatory and supervisory responses, but does not focus on how to harness market forces for prudential purposes.

1.2 Main strands of work

1.2.1 We followed four main strands of work:

(i) risk classification and cause-effect mapping;
(ii) surveys on actual failures and near misses between 1996 and 2001;
(iii) twenty-one detailed case studies that were presented and discussed;
(iv) diagnostic and preventative tools questionnaire.

1.2.2 The case studies were felt to be a particularly useful and unique exercise. The Working Group was made up of insurance supervisors and is the only group able to share and peer-review extensive confidential information about our practical experience in individual cases. This allowed us to analyse all the various causes and how they are related to each other in practice. Each case study type presented in this report is an amalgam of more than one case in order to preserve anonymity.

1.2.3 The first two strands were largely preparatory. Classifying risks led us to our cause-effect approach as we saw that some risks are linked to other risks in causal chains. The surveys helped us to identify the main risks on which to focus the case studies.

1.2.4 We discussed diagnostic tools and early warning signals used in the cases studied and ideas for new diagnostic, preventative and curative tools that might have been useful. Analysis of the diagnostic and preventative tools questionnaire then developed this analysis of our toolkits in a systematic way, showing how they map against the risks identified, within a framework of principles, and suggesting areas for development.

1.3 Key findings

Analysing the full causal chain improves supervisory practice

1.3.1 In each of the detailed case studies we examined we found a chain of multiple causes. The most obvious causes were the inappropriate risk decision, the external 'trigger event' or the resulting adverse financial outcomes. However, further analysis showed that these causal chains began in each case with underlying internal causes, being problems with management or shareholders or other external controllers; these problems included incompetence or operating outside their area of expertise, lack of integrity or conflicting objectives, or weakness in the face of inappropriate group decisions. This empirical analysis of actual cases, which depended on supervisors sharing and scrutinising confidential information, is an important contribution of this Working Group and complements academic studies by others.

1.3.2 These underlying internal problems then led to inadequate internal controls and decision-making processes, resulting in inappropriate risk decisions. The firm was now vulnerable to the external 'trigger event' which caused adverse financial outcomes and, in some cases, policyholder harm. The situation got even worse where obstacles prevented the firm from correctly evaluating the financial outcomes and feeding this back to deal with the problem. This generic causal chain is presented in figure 3.2 below.

1.3.3 We concluded that supervision will be most effective where we have the tools to tackle the full causal chain. When we analysed and compared our toolkits, we noted that there are some common tools in each area, but there is also a wide range of different tools used and much practice to be shared.

1.4 Main conclusions

The review of solvency needs to encompass governance and risk management

1.4.1 Our need to tackle the full causal chain means that as well as considering solvency it is important that we have tools to focus on management and how they manage risk. Our toolkits will therefore need to be wide and include informal and subjective tools to deal with management, internal controls etc, and our more detailed findings and recommendations cover solvency and many other areas. We believe that the whole review of prudential regulation and supervision needs to be similarly broad, although this does not necessarily mean that it all needs to be included in Directives.

We have much to share and areas for further work

1.4.2 We believe there should be a standing Working Group of the Conference on prudential matters, as this report is only the start of a long process covering difficult ground. Supervision of insurance firms is difficult, particularly as we believe that there needs to be more focus on qualitative factors such as quality of management and suitability of systems and controls. Such areas are subjective and rely heavily on supervisory skill and experience. We have found during the work of this Working Group how important and useful it is to share practice and experiences among European supervisors in order to develop our methods and expertise.

1.4.3 Further work is needed on the certain areas, and we make the following suggestions:

(i) Exchange of information between supervisors should be encouraged and mechanisms should be developed further, building on the Helsinki protocol. This should include agreement on a set of triggers for notification to supervisors in other Member States, e.g. concerns over the propriety of senior management.

(ii) Risk management systems, internal control and certain 'people issues' (for example incentive structures) should be examined in more detail by the Madrid Working Group with a view to agreeing a framework of principles and key requirements as well as further consideration of how to supervise these.

(iii) We recommend that another working group of the Conference should look at sharing ideas on effective supervision in certain technical areas, in particular investment risks (for example giving guidance on asset liability matching), and on newer tools such as stress and scenario testing methods and assumptions.

(iv) A Conference working group could look at some specific aspects of information sharing (see point (i) above) including agreeing a common system of early warning signals and sharing ideas on more detailed signals, setting a framework and common standards for sharing data, and setting a framework for crisis management. The group should plan for the prompt establishment of an ad hoc group to share information and expertise rapidly to help manage crises.

1.4.4 We identified other technical areas where more work is needed, particularly linking solvency requirements and trigger levels to a firm's risk exposures, developing frameworks and guidance for assessing and monitoring firms' management of certain types of risk, and setting up mechanisms for dealing with emerging technical issues.

1.4.5 We also make a number of detailed suggestions for Solvency II on new supervisory tools and new uses of existing tools. These are set out in chapter 6 of this report.

2. INTRODUCTION AND BACKGROUND

2.1 Context

2.1.1 The European Commission is undertaking a fundamental review of insurance regulation, the 'Solvency II' project. The EU Insurance Supervisors Conference was asked to make recommendations for that review, and to that end, set up this working group of insurance supervisors to look at the practical lessons from the past and to highlight emerging trends in the risks faced by insurance companies.

2.1.2 Insurance is a dynamic industry operating in an uncertain world and uniquely exposed to uncertainty. To succeed, it needs to be flexible and innovative, and in a free market failures will result. Regulatory styles within the Community differ, varying from regimes with a 'zero-failure' target to 'market-based' regimes where orderly exits of failed companies are allowed and even expected; indeed it is becoming increasingly difficult to operate a zero-failure target in certain jurisdictions due to changes in market attitude among the larger firms. The EU prudential regime should reflect and accommodate these features.

2.1.3 This working group met for the first time on 6 July 2001 and meetings were held regularly between then and 23 September 2002. There were seven full meetings and one sub-group meeting in total.

2.2 Goals

2.2.1 The aim of the working group is to use its practical experience towards increasing our understanding of the risks that can affect the solvency of insurance firms and to review how the monitoring by supervisors of firms' management of these risks might be improved. Specifically, its goals are to:

(a) build upon the 1997 Müller report[3] to formulate a more up-to-date picture of the risks that are faced by European insurance firms, and to this end:

- identify and analyse the risks that have led to actual solvency problems during the period from 1996 to 2001, or created a significant threat to the solvency of a firm ('near misses');
- identify and analyse any new and emerging risks that may affect the solvency of insurance firms; and

[3] see footnote 2 above

- prioritise each risk that has been identified;

(b) evaluate how supervisors might respond to these prudential risks, by looking at:

- how effectively of the current solvency system (and its three building blocks of assets, liabilities and capital) has detected in advance firms in difficulty over the last six years;
- how effectively current supervisory tools prevent, detect in advance and cure or minimise policyholder harm; and
- typical early warning signals, including both quantitative and qualitative factors, and to identify new signals.

2.3 Limitations

2.3.1 Since this report is designed to supplement the 1997 Müller report, the working group restricted itself to considering events over the last six years. As a result, this report may be typical of only part of the prevailing economic and insurance market cycles and of particular market characteristics (see 2.3.6 for the economic context of this report). For a more complete picture it should be read in conjunction with the Müller report.

2.3.2 Nevertheless, as the insurance industry is sensitive to changes in the economic environment as cycles unfold, it is important to have a supervisory system that is both robust and flexible enough to operate effectively over economic cycles.

2.3.3 The Working Group has looked at the regimes in Europe before implementation of the Solvency 1 Directive and the Insurance Groups Directive in the last few months. Some conclusions will already have been dealt with by changes introduced under those Directives.

2.3.4 We note that the design of Solvency II should take IAS[4] into account, which will have wide-ranging implications, but we have not attempted to explore this further.

2.3.5 This report looks at behaviour and outcomes within firms, and at the responses of regulators and supervisors, but it does not consider in any depth how to harness market forces to help achieve prudential aims.

[4] International Accounting Standards, especially the project to develop a new standard on the treatment of insurance contracts.

A varied economic context

2.3.6 The European economic environment for insurance firms in the period from 1996 to 2002 includes the following:

- ? interest rates have stabilised at a lower level across Europe, helped by the introduction of the single currency, and investment yields have fallen as a result, causing problems for Life firms where guaranteed returns result in low or even negative spreads;
- ? government budget surpluses or at least lower deficits in some countries at times in the period reduced the supply of government debt (particularly longer-dated debt), reducing yields for firms or leading them to higher risk assets such as corporate bonds;
- ? inflation has remained low and relatively stable, increasing the cost of any annuities and other long-term benefits that are not index-linked;
- ? equity markets experienced a strong bull run from 1996 to 2000, which helped some firms in our case studies (see 4.4 below) to survive severe underwriting losses;
- ? equity and corporate bond markets have suffered severe falls in 2001 and 2002, with the bursting of the technology bubble and contagion from corporate scandals mainly in the US, hurting many insurers who were exposed to those asset types and making them more vulnerable to underwriting setbacks; and
- ? demand for Life products and pensions is influenced by economic growth, which was generally strong earlier in the period and weak towards the end, but with marked differences between Member States. It is also linked to the ratio of savings to income – this has been falling during the period in some Member States.

2.3.7 The insurance market environment has also been changing over the same period:

- ? Life and non-Life firms are experiencing rising claims and claims estimates due to people living longer, increasing medical technology costs, increasing litigation volume and cost, changing weather patterns (more frequent extremes e.g. December 1999 storms or summer 2002 central European floods, after the period of our case studies) and higher maximum expected losses from other catastrophes (e.g. US terrorist attacks on 11 September 2001);
- ? the beginnings of welfare state reform in some Member States are helping the Life industry as individuals take more responsibility for providing for their own long-term financial needs;

- there has been an increase in the 'equity culture' with a shift of investments into riskier assets (e.g. relaxation of investment rules in certain Member States);
- the Non-life insurance and reinsurance cycles showed weak pricing particularly in the middle of the period, harming firms, especially reinsurers;
- distribution and the competitive environment are probably changing with moves in some States towards bancassurance and greater use of the internet, coupled with greater freedom to sell cross-border especially within the single currency zone
- the effects of detariffication[5] in Life and Non-life insurance were still being felt in the early part of this period, with firms, consumers and other market participants having to adjust to new freedom in the market;
- we sense changing shareholder attitudes, with a tendency to prefer higher returns on capital in the short term and to have less concern for the long-term impact on their reputation of withdrawing support from a firm in trouble, increasing the risk of a firm's failure; and
- supervisors' confidence in audit reliability has been shaken by the wave of corporate scandals in the US and Europe over the last year, leading the US authorities to take radical steps to prevent auditors' conflicts of interest.

2.4 Make-up of the working group

2.4.1 The working group was made up of insurance supervisors from most Member States, together with a member of the EC Conference Secretariat. A representative from the European Commission (EC) attended for parts of the discussions. Paul Sharma from the UK Financial Services Authority chaired the working group.

2.4.2 Member states represented on the working group were: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Liechtenstein, Luxembourg, the Netherlands, Portugal, Spain and the UK. Contributions were also received from Iceland, Norway and Sweden.

2.5 Background

2.5.1 We include here some background data on Member State supervisors and firms supervised.

[5] Detariffication was the removal of fixed tariffs set by the regulator for pricing certain classes of business. Fixed tariffs were still in place in certain European countries until 1994.

Data on firms and supervisory resources

2.5.2 The median number of firms supervised by each country is 302, with a significant majority by number being non-life insurers in most cases. The number of firms per member of supervisory staff ranges from 2 to 32 in different countries, with an average of 13. Excluding smaller firms substantially reduces the variability. This suggests that all supervisors devote significant time and broadly comparable resources to their larger firms; for small firms on the other hand the resources applied appear to vary more, depending on the characteristics and variety of the firms supervised and the supervisory objectives. A number of delegations mentioned 'themed visits', which may be used to supervise small firms in more detail on a sample basis or focusing on particular areas of higher risk.

Largest classes of business

2.5.3 Each delegation reported the top three classes of business in its territory. The figures are presented below.

Figure 2.1: Life industry – top three classes for each country

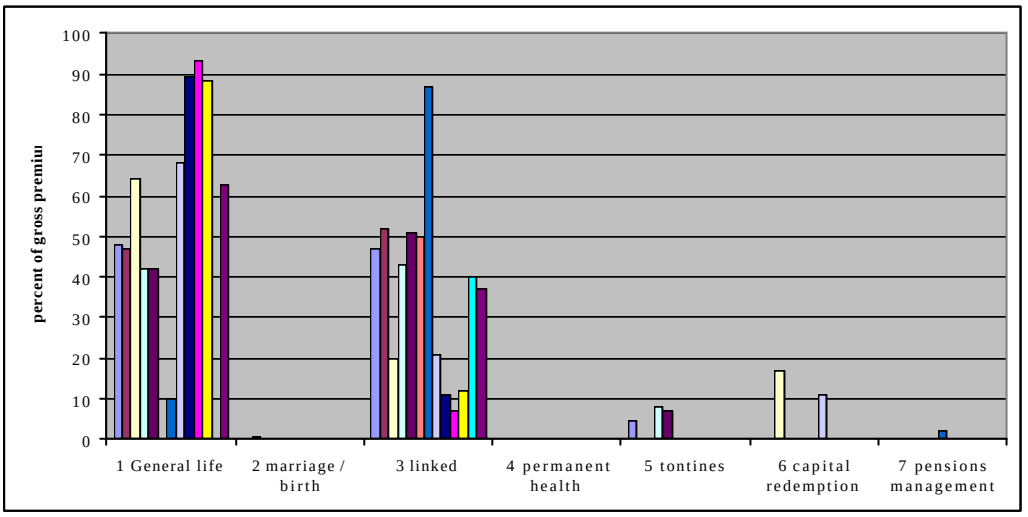
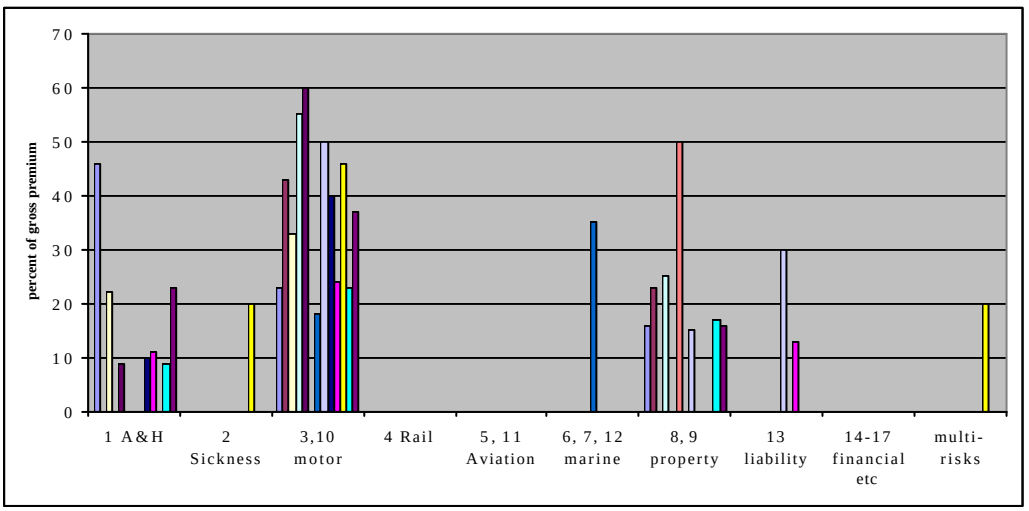


Figure 2.2: Non-life industry – top three classes for each country



2.5.4 These charts show a certain clustering of major risk classes written; on the other hand, the other classes could carry a disproportionate threat to supervisory objectives, so we do not recommend focusing the prudential regime on the dominant classes of business.

Member states have a range of supervisory objectives

2.5.5 Member states have a range of supervisory objectives, which overlap in some areas and not in others. Objectives include:

in all cases

safeguarding solvency of firms	protection of customers' rights

in some cases

maintaining stable market / market confidence	maintaining an efficient market
supervising market conduct	dealing with financial crime
maintaining a competitive market	consumer information
explicit statement of a zero-failure aim	compensation scheme for consumers
statement that zero-failure is not the aim	

Summary of supervisory process:

risk-based in most cases, although based on size by some
some use of supervisory risk models
some risk assessments, but can be highly subjective
in some cases more reliance is placed on ? a firm's own risk management ? external experts, e.g. auditors, appointed actuaries, consultants etc ? a consensual approach with very rare use of statutory tools ? a formal approach with breach of specific requirements triggering intervention

2.5.6 It is important for the design of a European prudential regime to take this variety of objectives. In particular, the fact that some Member States aim for zero-failure while others do not and that some have an explicit efficient markets objective can affect the analysis of the costs and benefits of regulation, including the balance between preventative measures and market freedom. We drew an analogy with speed limits.

3. METHODOLOGY AND APPROACH

3.1 Risk classification

3.1.1 To achieve the aims outlined in section 2.2 we considered how to categorise risks to help identify solvency issues. The process of categorising risks helps us to understand the wide variety of ways in which risk can arise and affect a firm. Without such an understanding of the multi-dimensional nature of risk it is very difficult to prioritise risks or control them[6]. Due to the many ways in which risk can be described and understood we have not included a general definition of risk in this paper. We believe it is important not to restrict ourselves to a single definition as different definitions may be appropriate in different contexts. However, we recognise that there are a number of general definitions in the academic literature that may be appropriate[7].

3.1.2 In view of the extremely diverse nature of risk we concluded that there were many different and equally valid ways of categorising it and that a taxonomy of risks would be appropriate for any approach[8]. Such a taxonomy would indicate the hierarchical grouping of risks to aid analysis.

3.1.3 We also felt that it would be helpful for the report to categorise risks in more than one way. This is because different methods of categorisation might be useful in different contexts, for regulators and regulated firms. Two such methods of categories, developed by delegations and presented to the working group, are outlined in Annex B. We adopted another method, which arose from our initial analysis of risks described in section 3.2 below, for the rest of our work; this classification is presented in figure 3.2 below and in more detail in Annex A.

3.1.4 We do not consider that the choice of one method over another for categorising risks has a significant effect on the findings and conclusions of this report. In fact, each of the methods in Annexes A and B are consistent with, and indeed lead to, the cause-effect methodology that is explained below.

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[6] For more on the multi-dimensional nature of risk, and some ways in which risks can be categorised see C Culp (2001) *The Risk Management Process: Business Strategy and Tactics*, Wiley Finance, New York.

[7] For more on definitions of risk, see A Tosetti, T Behar, M Fromenteau and S Menart (2001) "Insurance: Accounting, Regulation, Actuarial Science" *The Geneva Papers on Risk and Insurance: Issues and Practice*, Vol.26 No.2, 232-251; L Eeckhoudt and C Gollier (1993) *Les Risques Financiers: Evaluation, Gestion et Partage*, McGraw Hill, Paris; and W Furrer (2002) *A Systematic Approach for Risk Analysis in Insurance*.

3.2 Cause-effect methodology

3.2.1 The cause-effect methodology was arrived at following a brainstorming of the risks faced by insurance firms. The brainstorming exercise and our resultant attempts at categorisation were further aided by the contents of the Müller and KPMG[9] reports. Delegates also provided their own lists of risks.

3.2.2 Cause-effect methodologies are widely used to analyse failures. For example, they have been used to understand human disasters (e.g. rail and air crashes) and the failure of firms (such as Long Term Capital Management and Barings). The primary benefit of such approaches is that they help us to comprehend both the underlying sources of a particular risk and its ultimate impact on a firm[10]. This allows us not only to understand the importance of a risk, but also better to control it. However, we need to exercise some caution in transferring these risk management techniques to insurance.

3.2.3 The brainstorming exercise was relatively rough and ready and produced a long list of risks that we then sought to categorise. As noted in section 3.1.2, there are multiple approaches to categorising risks. The choice of approach is often a subjective one and we believe that the approaches outlined in annexes A and B of this report are equally valid.

Link between underlying causes and intermediate causes

3.2.4 Risks can be described and categorised by either their causes or effects. However, since the effects of a risk are often more obvious that its causes, it is typical for risks to be described by their effects. This observation was confirmed by the brainstorming exercise, where most of the identified risks are actually describing effects (e.g. claims deviation risk). Since this only provides part of the picture we decided that a full cause-effect analysis was needed in order to get a better idea of the causes behind these observed effects.

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[8] For the same reason, we abandoned the idea of 'prioritising' the different risks faced by insurance companies.

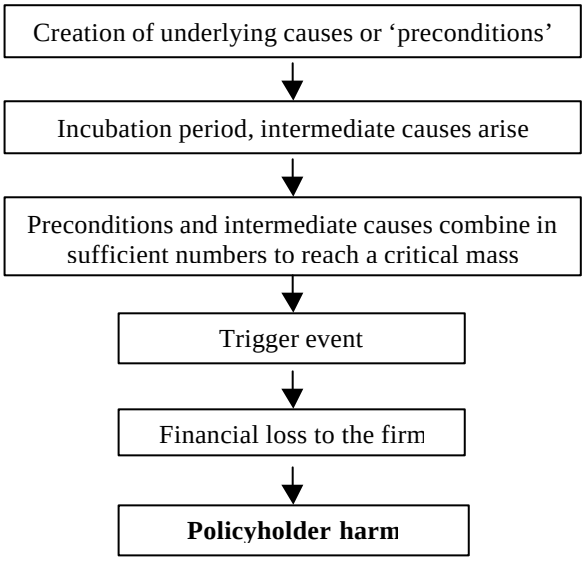
[9] KPMG (2001) *Study into the methodologies to assess the overall financial position of an insurance undertaking from the perspective of prudential supervision*, European Commission

[10] For further discussions of the value of understanding the causes and effects of risks see: S Ashby and S Diacon (2000) "Strategic Rivalry and Crisis Management" *Risk Management an International Journal*, Vol 2, No 2, 7-15; A Waring and I Glendon (1998) *Managing Risk: Critical Issues for Survival and Success into the 21st Century*, International Thomson Business Press; D Blockley (1996) "Hazard Engineering" in C Hood and D Jones (eds) *Accident and Design*, UCL Press, London; and P Shrivastava et al (1988) "Understanding Industrial Crises" *Journal of Management Studies*, Vol 25, No 4, 285-303.

3.2.5 It is rare for an adverse event to have a single cause. Thus once we look beneath the observed effects of a risk it is common to find that they have been influenced by a wide range of different, but often interrelated, causes. As a result of this, most cause-effect methodologies try to identify and categorise risks with a view to mapping the causal relationships between them[11]. The aim is to understand the full causal chain, i.e. from underlying causes, through the intermediate causes and ultimate trigger events to the financial outcomes and any resulting policyholder harm (see figure 3.1).

3.2.6 The diagram below (Figure 1) illustrates one possible causal chain that has been taken from the academic literature we reviewed. We applied a similar approach to the design of the risk-map (see Figure 2) which we used to analyse the detailed case studies.

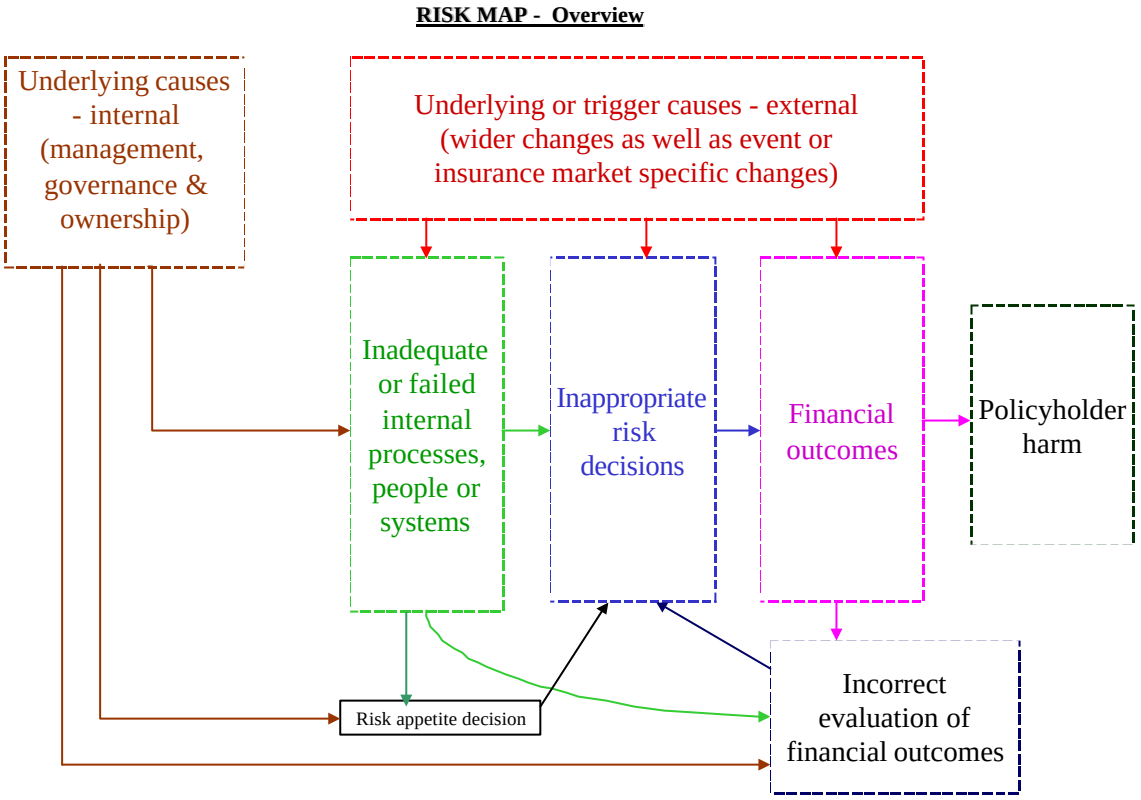
Figure 3.1: A Possible Causal Chain [12]



[11] See Shrivastava et al (1988) and B Turner (1978) *Man-Made Disasters* Wykeham Press, London.

[12] Figure adapted from Turner (1978) above.

Figure 3.2: Risk-map template



Insight into causal chains

3.2.7 There are number of important insights to note when using cause-effect methodologies:

(i) It is useful to distinguish the chain of underlying causes from the 'trigger event'

The various causes which can lead to a particular effect may not all develop at the same time. Being the most immediate cause, the 'trigger event' is often the easiest to identify; however it provides only a partial explanation for a particular effect as it is merely the final link in a chain of causes. Only when combined with underlying and intermediate causes does the 'trigger event' become a problem (consider a spark: without flammable material nearby it is unlikely to cause a fire).

(ii) A trigger event uncovers the vulnerable firm

During our discussion of the case studies delegates often mentioned another firm that had faced the same or similar trigger event, but had not got into serious difficulties. Examples included the impact of the December 1999 European storms. When we compared the two cases, we found nearly all the time that the

significant difference was that the insurance company that got into serious difficulties had an underlying management weakness or operational weakness. This suggests that such companies were more prone to failure than those that did not have these weaknesses. The validity of this observation is supported by the cause-effect work of others, who have also suggested that firms can exhibit a 'proneness to failure'[13]. This implies that if we can identify these vulnerable firms and possibly correct the proneness then we may be able to reduce the problem rate. This issue is developed in more detail in chapter 5 below.

(iii) The relationships between causes and the cause-effect duality are important

The relationships between causes provide the 'links' in the 'chain' of causes that will finally result in the manifestation of a particular effect. For example, bad management can lead directly to inadequate internal processes and systems that may eventually, in turn, result in inappropriate risk decisions. If an adverse change in the prevailing social or economic climate were to occur after an insurer had made some inappropriate risk decisions, the insurer might well get into serious difficulties. We also noted the duality of causes and effects - where in many cases a risk is both an effect of prior risks and itself the cause of further outcomes. In other words, we found that many of the risks that we had initially identified turned out to be intermediate links in a larger causal chain. Identification of this led to the design of our own risk-map (see Figure 2).

(iv) no two causal chains will be exactly alike in practice

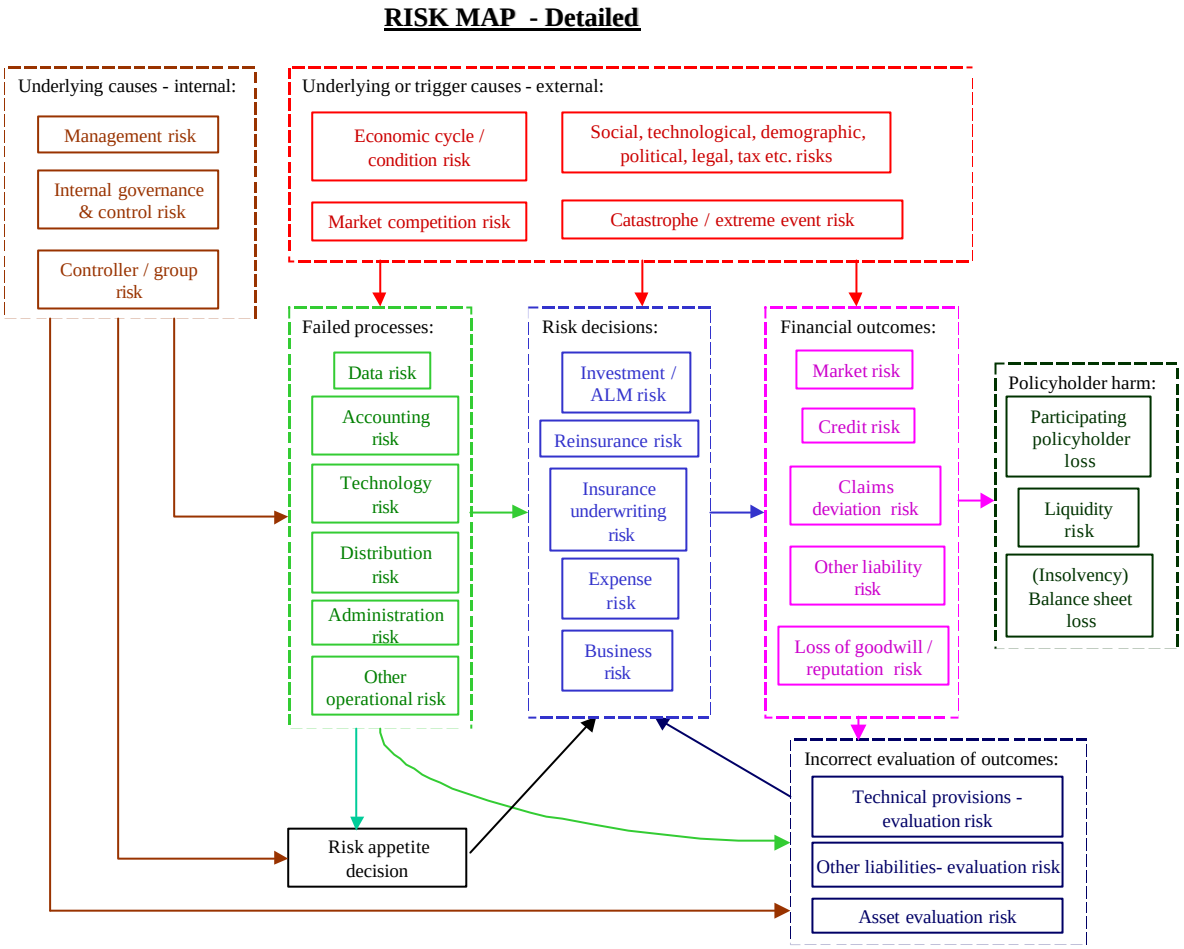
Although it is possible to identify common causes and common relationships between causes, in practice no two causal chains will be exactly alike. For example, it might take years before one causal chain gives rise to a particular effect, while another very similar chain could result in the same effect within days. In addition, the significance of a particular cause and its relationship with other causes is likely to vary between different causal chains.

3.2.8 The mapping of the risk classification onto the risk-map is shown in figure 3.3 below.

3.2.9 In order to refine our 'cause effect' risk-map, as well as to validate and supplement the information that was gathered though the brainstorming exercise, we conducted a variety of other exercises (including an analysis of some case studies and several questionnaires). Each exercise is discussed briefly below, and further details of the questionnaires are provided in the Annexes to this report.

[13] For example, see Turner (1978) and Blockley (1996) above.

Figure 3.3: Risk-map – detailed



3.3 Actual failures and near misses questionnaires

3.3.1 These were two factual questionnaires looking at past experience to identify the reasons for failure or near failure, and the tools for intervention. These questionnaires were designed to take an overall look at the whole population of risks and supervisory interventions that existed in the insurance sector. This ensured that as many risks as possible were captured for analysis and to check that the case studies (see 2.4) that we were using to verify our cause-effect methodology were a representative sample.

3.3.2 The actual failures questionnaire was conducted for the European Commission, who allowed the Working Group to make use of it. It was completed by Member States in autumn 2001 and is in two parts: the first asked what early intervention measures were available to each member state, and any time-lag problems in applying them. The second part asked how many firms had undergone a range of specific curative measures. A more detailed summary of the actual failures questionnaire and its findings is provided in Annex C.

3.3.3 The findings of the near misses questionnaire were presented at the April 2002 meeting of the Working Group. The questionnaire was a survey of cases in which the EU minimum was not breached but the supervisor felt that intervention or special measures were needed. The aim was to identify the underlying causes of these near misses, the 'symptoms' which revealed them and the measures taken to contain and finally resolve them. Further details are given in Annex D.

3.4 Detailed case studies

3.4.1 In this exercise individual delegations prepared detailed case studies from recent supervisory cases of firms that either breached their solvency requirement or came close to doing so. This exercise built on the particular strength of the Working Group in being able to draw on practical supervisory experience and to share a considerable amount of confidential information about individual cases. This confidentiality has been preserved in our report by hiding the identity, nationality and idiosyncrasies of the individual cases and only presenting generic case study types that are each derived from more than one real case.

3.4.2 Twenty-one case studies were prepared by delegations each focusing on an individual firm that was in trouble[14]. The cases were presented to the Working Group and discussed in turn. In particular, we examined the internal and external causes of the firm's problems and constructed a risk-map of the full causal chain, i.e. from underlying causes, through intermediate causes and trigger events to financial outcomes and resulting policyholder harm. We also considered the effectiveness of the supervisory tools that were applied and whether other tools or early-warning indicators could have helped. These cases are described in detail in section 4.4 below.

3.4.3 The case studies were designed to illustrate each of the main categories of risk in the Müller report. We later added to these certain other risks that we had identified in the brainstorming exercise (see Annex A) and the actual failures and near misses questionnaires (see Annexes C and D). The topics delegations were asked to cover included the following:

- underwriting risk (risk selection)
- underwriting risk (pricing)
- expense risk
- reinsurance risk
- provisioning risk
- catastrophe risk

[14] Two case studies concerned industry issues that affected a number of firms in the same way.

- ? evaluation risk
- ? interest rate risk
- ? depreciation risk
- ? distribution risk
- ? cross-border risk
- ? conglomerate risk
- ? control and group risk
- ? business risk (external changes)
- ? liquidity risk
- ? investment risk
- ? asset realisation risk
- ? asset-liability matching risk
- ? operational risk (outsourcing)
- ? governance risk (mutuals)
- ? business risk (growth)

3.4.4 The risk-maps that we created for each case study are designed to show the causal chains that lead up to the final effects of these risks. The risk-map template can be presented on three levels; the first two are:

(i) a summary level showing the broad categories of risk (based on the template in figure 3.2); and

(ii) a detailed level as applied to a particular case (see template at figure 3.3).

3.4.5 We then added to the risk map some indications of diagnosis and cure, as well as diagnostic and preventative tools which could have been useful. This gives rise to:

(iii) a detailed level which also shows the relevant supervisory tools (diagnosis and action) and lessons learnt.

We have presented only the last, most detailed level, in section Annex E below. The additional symbols are explained in the key on page 93.

3.5 Diagnostic and preventative tools questionnaire

3.5.1 The purpose of this questionnaire was to identify and describe the diagnostic and preventative tools that are used by insurance supervisors, and to capture some new ideas about how to use these tools. We also used the results of this questionnaire to identify the diagnostic and preventative tools that can be applied to each point of the causal chain that is represented by our risk-map (see section 5.2 below). Annex G includes some diagrams to clarify the nature of the different types of tools.

3.5.2 Despite the length and difficulty of the questionnaire, we had replies from all delegations, many very detailed, and would like to note the considerable amount of work this represents.

3.5.3 There is considerable variety in the way delegations answered the questionnaire, including the balance between technical information and commentaries on current practice. Most delegations answered all questions, although a few grouped some answers depending on how they classify risks, and there was much cross-referring within answers to reflect overlapping or linked risks. There was also a wide range of comments and ideas for new tools or new uses of existing tools, which have been reflected in the tables in section 5.2 below. All of this gives us good assurance that we have complete or nearly complete coverage of the population of supervisory tools used.

3.5.4 We believe that the results of this questionnaire can serve as a basis for identifying gaps in our supervisory toolkits and help to share ideas among supervisors.

3.6 Linking the exercises and summing up

3.6.1 The following paragraphs explain how we linked the exercises together, and how we drew conclusions from them.

- The brainstorming and resultant risk mapping exercise led to the choice of a cause-effect methodology, which then underpinned the remaining exercises.

- The questionnaires on near misses and actual failures indicated the range of risks that we needed to consider in the case studies. This enabled us to make sure that a relatively limited number of case studies would nonetheless give us sufficient breadth, so as to cover all the major risks that we identified.

- The detailed case studies yielded valuable information, about the interrelationships of risks and the nature of the underlying causes, about how different types of cases were detected, and the diagnostic and curative tools used. The discussions also generated ideas about new early-warning indicators, and new or different preventative, diagnostic and curative tools to use. From this we were able to draft our conclusions.

- The diagnostic and preventative tools questionnaire then examined in more detail the tools currently used by delegations for particular risks and new ideas. This has enabled us to make some more specific recommendations, and makes our conclusions more comprehensive and less anecdotal than if they were based simply on a selection of case studies.

4. LESSONS ABOUT RISK

4.1 The identification of causes and effects

4.1.1 We concluded from our initial discussions that identifying the causes of events and their interrelationships is potentially of considerable value, since it may be possible to find ways to control them and thus reduce the risk that certain effects may occur that could threaten solvency. This is where our case study work added considerable value, since it allowed us to explore in detail the causal chains that could give rise to particular problems and effects. and how we might control them.

4.1.2 We concluded that an insurance firm has two levels of risk: the business of insurance is taking on risks; but in the process of doing its business, an insurer faces many other risks. Insurance firms face many risks of this second level, and it is the events arising from exposure to these risks that are most often observed. The causes of these events are harder to identify, and we concluded that a more thorough identification exercise is required.

4.1.3 Root causes, such as poor management, are often the most difficult to identify. Internal underlying causes to do with management underlay every case, but only in two out of the twenty-one cases were these problems identified and addressed before adverse external events had serious effects. The significance of poor management and the difficulties associated with its detection were not, however, obvious from the actual failures and near misses questionnaires. This further supports our view that the detailed case studies led to a greater understanding of the issues.

4.2 A chain of multiple causes emerged from the case studies

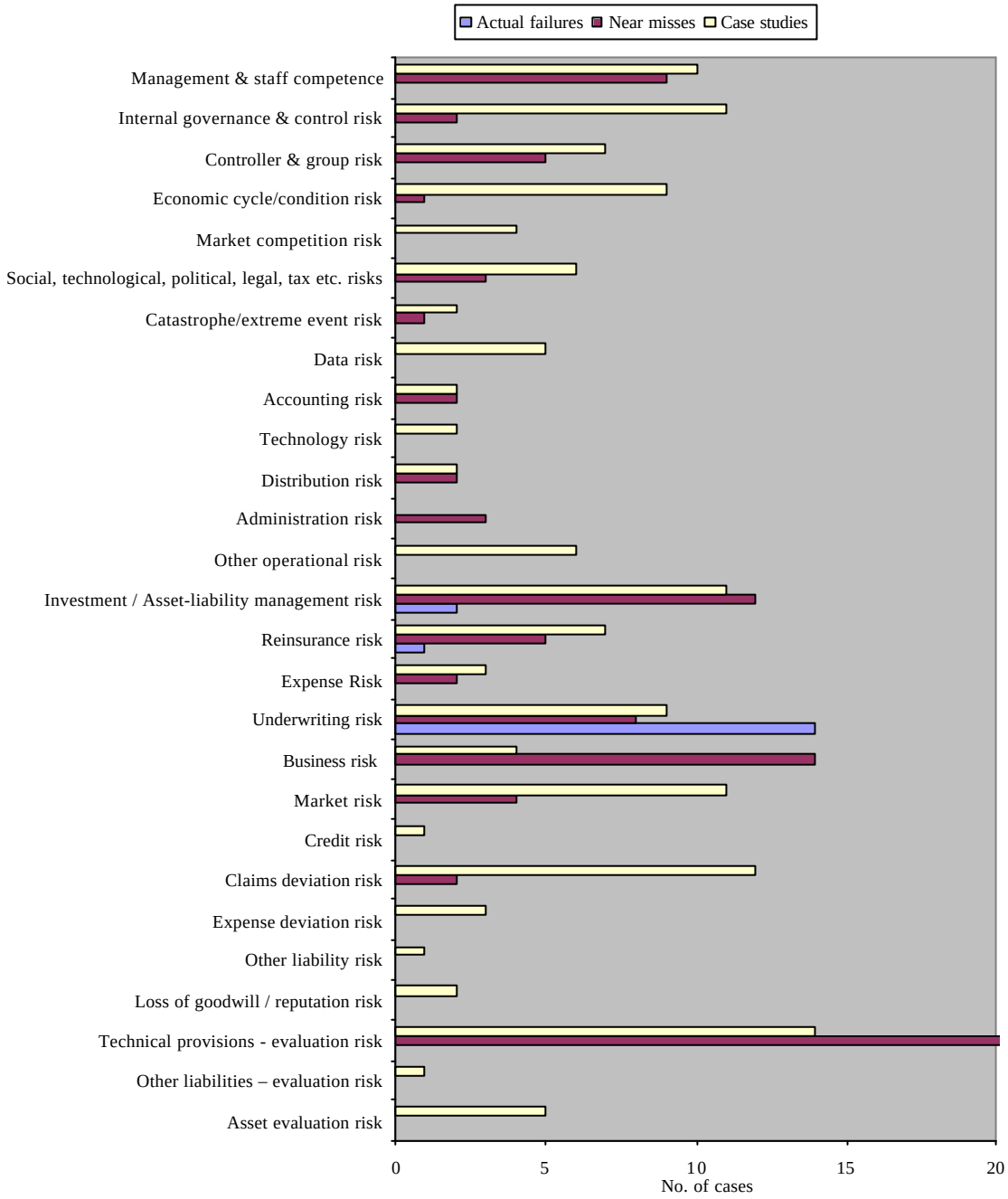
4.2.1 The actual failures questionnaire, near misses questionnaire and the case studies had different methodologies and revealed quite different patterns of causes and effects. These patterns are presented in the figure below.

4.2.2 Two points should be noted about this analysis:

(i) In the actual failures and near misses questionnaires many of the effects that delegates observed were not ascribed to a cause. For instance, in the actual failures questionnaire only the defaults were analysed by cause and not the majority of firms which recovered. In contrast, each case study was subjected to detailed individual analysis, and so a number of contributory risks at various stages in the causal chain were identified.

(ii) The analysis by risk type introduces a degree of subjectivity, so it may not be appropriate to draw detailed or precise conclusions from the results.

Figure 4.1: Number of cases in which each risk-type was identified



4.2.3 Some general observations can be made about this comparison of results. As explained above, the difference in pattern is due to the difference in methodology between the surveys and the case studies. The surveys identified the single main cause of the failure or near miss whereas the case studies analysed all causes in each case, including up to eight risks per case, and were selected to cover all or most types of

risks to give a good spread. The responses to the actual failures questionnaire were difficult to analyse in this format.

4.2.4 The interesting point is that the survey responses are generally clustered around inappropriate technical risk decisions (for instance investment risk or underwriting risk) which are the direct cause of the financial outcomes seen. A large number of near misses were ascribed to technical provision evaluation risk and were mostly triggered by a single external event affecting the industry in one country. This peak also links back to underwriting risk. This clustering around poor risk decisions and financial outcomes, rather than the causes of those decisions, supports our view that underlying causes generally require more effort to diagnose. The identification of underlying causes may therefore be an area to focus on when developing diagnostic and other tools.

4.2.5 We believe that the range of results from the case studies represents a more accurate picture of the risks faced by insurance companies. This leads us to the view that there are risks throughout the causal chain that represent underlying and intermediate causes or subsequent effects which are relevant to our supervisory purpose. Analysis of trigger events and of underlying causes are complementary. The most effective supervisory system will, therefore, deal with the full cause-effect range of such risks.

4.3 Our analysis sought to identify the common causes

4.3.1 We found that our twenty-one case studies had a lot in common. It also emerged during our discussion of the case studies that they shared common features with many other cases that the delegations had experienced, but which were not presented formally to the Working Group. (It is worth noting again the potential limitations of this exercise, in section 2.3 above, including that these cases are drawn from the last six years and may be representative of only part of the market cycle and particular market characteristics.)

4.3.2 We have therefore grouped the case studies into twelve types (see below). The aim has been to group these cases according to similarities in the causal chain rather than by ultimate effects. Interestingly, some of the cases exhibited patterns that fell into more than one group. Conversely, some cases with similar outcomes are not grouped together because our analysis revealed very different underlying causal chains. For example, two case studies resulted in over-concentrated, illiquid investments that performed badly. However, one was due to a firm seeking to diversify as its core business dwindled, while the other was due to a firm following a strategy dictated by its non-insurance parent.

4.3.3 Combining the real cases has the added advantage of preserving confidentiality. Every type presented below reflects aspects of more than one case. The types, corresponding to the narratives in section 4.4 below and the risk-maps in Annex E, are:

1. Parent sets inappropriate policy in pursuit of group objectives (strategic investments)
2. Parent sets inappropriate policy through poor understanding of insurance
3. Mutual insurer faces conflicting objectives
4. Business risk: large insurer faces merger integration issues
5. Cross-border management of insurance group
6. Life insurer – high expectations / long-term interest rate guarantees
7. Stagnating insurer diversifies
8. Underwriting risk: niche player with an evolving market
9. Insurer matches liabilities with correlated investments
10. Firms have inappropriate distribution strategies
11. Catastrophe / inadequate reinsurance planning
12. Outsourcing of key functions

4.4 Commentary on case studies

4.4.1 Parent sets inappropriate policy in pursuit of group objectives (strategic investments) – see risk-map at Annex E.1

In these cases the insurer's parent undertaking set an aspect of policy which had a detrimental effect on the insurance firm because they had objectives other than prudent management of the insurance firm. Group management overrode or directed local decisions, so local management either lost some autonomy or they did not properly check the suitability of their investments.

In these cases the group management used the insurer's balance sheet to make strategic investments. This has a number of problems:

(i) the investments are typically concentrated and may be illiquid due to the lack of a traded market or the large size of the holding – also this often makes them hard to value;

(ii) group strategy is likely to determine their disposal rather than optimal asset management;

(iii) there may also be a 'procyclical' effect as investments, particularly those in other insurers, may fall in value when market conditions are harsh;

(iv) this may be made even worse by group pressure to provide more loans and capital to the investee rather than less – inadequate credit provisions may also become a problem; and

(v) this also carries a systemic contagion risk, i.e. that the collapse of one insurer is more likely to bring down others.

Conflict with group objectives and loss of autonomy can arise gradually, making them harder to detect and act on. Regulatory reporting was important in some cases, but supervisors identified the real problem mainly through on-site inspections. Regular assessment of the firm's autonomy was suggested, and tighter rules on types of investment and asset-liability matching.

4.4.2 Parent sets inappropriate policy through poor understanding of insurance – see risk-map at Annex E.2

In these cases the insurer's parent undertaking had a non-insurance focus and set an aspect of policy which had a detrimental effect on the insurance firm because they lacked a proper understanding of the insurance business and its regulatory requirements.

In one case a bank set up a general insurer. Despite the financial awareness of the parent, management had little insurance expertise and put in place inadequate underwriting systems, so underwriting losses arose. Rapid growth suggested under-pricing to the supervisor, who also noted paid and outstanding claims ratios out of line with the market generally. Management were co-operative, and the supervisor only needed to act informally and bring the issues to management's attention. A key risk factor is lack of relevant expertise, which is an early warning sign to watch for when even experienced operators move into a new area. Requiring appropriate expertise could serve as a powerful preventative tool.

In another case the insurer delegated asset management to a banking part of the group, and failed to supervise it. The banking side were experienced asset managers, but were not aware of the insurance regulatory requirements nor how to match assets to the insurer's liabilities, exposing the company to interest rate movements.

The supervisor required additional, frequent reporting while the firm was on 'close watch', and introduced experts to help improve policies and evaluation procedures.

4.4.3 Mutual insurer faces conflicting objectives – see risk-map at Annex E.3

A mutual insurer's management may have social and other objectives besides prudent management of the insurance business. In one case study this led them to use the insurer's balance sheet to invest in other activities for the benefit of their members. This led to a concentration of investments in group companies, real estate and, as it turned out, large credits to those companies, with significant bank debts. These factors led to a number of problems similar to those described in the first case type above. The solution was a programme of disposals and better asset diversification agreed with the firm.

Another conflict arises simply between the need for prudence and the wish to keep rates low for members. Mutuals who can make supplementary calls on their members may rely too much on that and relax their vigilance on risk selection and monitoring of claims development, which may in turn lead to buying too little reinsurance cover. They may face erosion of capital and difficulty in calling in additional premiums, especially when this is subject to a vote by members or when a significant number of members have since left.

4.4.4 Business risk: large insurer faces merger integration issues – see risk-map at Annex E.4

Large composite firms can be hard to manage efficiently, particularly those that have grown up through a series of acquisitions and mergers. Often firms face multiple legacy systems and ongoing system integration problems, so production of consolidated management information is unreliable. This hampers effective running of the group from the centre. The parts may have diverse types of business, structure and culture, which may again make centralised control difficult and lead to poor financial and underwriting discipline. This may cause a high expense ratio and large losses as the firm compensates for previous under-pricing and under-reserving. Merger costs are frequently higher than expected and firms may struggle to achieve the forecast cost-side synergies.

Early warning indicators are the high expenses combined with poor results which indicate that management may be under pressure to achieve volume (at the expense of underwriting profitability). Management may also be under pressure to report better results in the light of negotiations for further mergers or acquisitions, or to meet capital market expectations as such firms are often listed. And the merger carries the

risk of high restructuring costs, which often overrun. Finding new mergers and acquisitions can become almost a way of life, each transaction obscuring the underlying performance of the existing businesses.

Problems were detected as a result of increased scrutiny when a merger was proposed. A scheme of operations including full business plans and rigorous stress testing was recommended on a change of control.

4.4.5 Cross-border management of insurance group – see risk-map at Annex E.5

One cross-border insurance group studied had a poor management attitude centrally which affected the conduct of operations in more than one member state. Initial symptoms of the bad attitude were noticed by supervisors in different countries, for instance aggressive pricing and undercutting of competitors, aggressive marketing and pursuit of market share, accepting borderline risks rejected by other firms and concentration on high-risk classes. Until information was exchanged between countries, at a later stage, the supervisors did not see the bigger picture of cultural problems throughout the international firm. In this case there was no consolidated supervision as the Insurance Groups Directive was not yet in force.

In another case the parent company was an intermediary and set up a subsidiary in another member state to sell insurance not locally but back into the parent's country. This is allowable under the Directives but creates special problems: the firm lacked inside experience of underwriting in the parent's marketplace as the parent was not an insurer and the underwriters were mainly recruited locally. It can also be harder for the firm to see current market performance and behaviour from afar.

We identified the potential for improved communication between supervisors to share concerns and doubts, including during the stage before triggers for formal action are reached, and to aid risk assessment of firms operating in each other's marketplace. Supervisors would need a high degree of mutual trust to be able to communicate subjective judgements and unsubstantiated concerns about firms at this stage, and there are confidentiality and data protection issues that would need to be dealt with.

Such co-operation and communication is particularly important where, as in the case studies, some of the early-warning indicators are more apparent in a firm's foreign market than in its home territory.

4.4.6 Life insurer – high expectations / long-term interest rate guarantees – see risk-map at Annex E.6

In these cases, management of life insurers set policies that gambled on future economic conditions. The interest rate guarantees contained long-dated options that could be expensive to service if rates fell significantly. In other cases insurers created high expectations of discretionary bonuses, and had low reserves due to high distribution of profits; these firms were exposed to falling asset returns. The guarantees and high expectations also increased the firms' exposure to tax changes, legal uncertainties or increases in liabilities due to longer life-expectancy.

But, although the dramatic shift in interest rates was felt across the market, in some cases the problems were compounded by a reluctance by management to admit the problem, understandable as this would have serious repercussions on the new business rate. This reluctance led to higher-risk investment strategies or financial engineering as management attempted to generate the high returns necessary in the short-term while hoping the market would move in their favour. Younger and faster-growing firms felt the effects of the rate changes more as they had a smaller proportion of their portfolios invested in older, higher-yield bonds to match the changing liabilities.

An excuse is that it had been the market norm to treat long-term guarantees at well below historical levels as not being onerous; but it was felt that in the worst cases management were late to understand or to acknowledge the nature and extent of the risks in the business. In one case the supervisor circulated a survey to ask firms about their exposure to falling interest rates, particularly for guarantees; the firm's management and internal actuary performed only a superficial review and reported no problems, but breached their solvency margin shortly afterwards. In such situations an external actuary might give a better opinion. The risks might have been identified through stress testing the portfolio under a variety of assumptions about future economic and market conditions, or in the case of the guarantees by applying sophisticated valuation methods to the embedded derivatives, e.g. capital market techniques. Where expectations have been created, the financial cost of meeting these should also be estimated and provided for, to ensure that the firm can treat its customers fairly.

4.4.7 Stagnating insurer diversifies – see risk-map at Annex E.7

The stagnating firms sought to grow, and moved into non-core business. The problem, particularly for niche firms, was that management had little wider experience and moved outside their field of expertise. Areas they moved into were:

(i) non-insurance activities undershoot business targets and overshoot expense budgets, leading to losses which threaten solvency;

(ii) illiquid, risky, concentrated investments perform poorly and further losses that had not been provided for arise on sale; or

(iii) new classes of insurance (for instance specialist lines or new geographical areas): systems and controls over underwriting are poor, so the firm is unable to assess risks properly leading both to incorrect pricing and to a reinsurance programme poorly matched to the claims profile of the business. Losses are such that the solvency requirement is breached.

In one case the true problem was discovered only through on-site visits as regulatory reporting did not reveal full extent of problem because of under-reporting of losses. In other cases however regulatory reporting served as an early warning of new areas and of concentrated investments. The main tool recommended is vetting of management expertise when firms move into new areas – not all Member States have this power. Also asset rules could be tightened up, as in the first four case types above.

4.4.8 Underwriting risk: niche player with an evolving market – see risk-map at Annex E.8

In these case studies management took a naïve approach ignoring developments in their market which changed the nature of the risks taken on. This was compounded by late and inadequate information on risks and claims as a result of operational weaknesses which meant poor underwriting risk decisions were made and the market developments were overlooked. Risks could not be priced correctly, as there was poor historical data and insufficient analysis and segmentation of the market so effective price discrimination was not possible. This was typically made worse by a focus on growth. Risk selection was poor, the risk profile became too high or lumpy, and too little reinsurance cover was bought. These effects had a knock-on effect on the reliability of technical provisions.

In one case the key operational weakness was management's failure to monitor and control outsourced activities properly – see case type 3.4.12 below.

As in the previous case type, requiring sufficient expertise is a key preventative tool. During on-site visits the supervisor should watch out for the quality and timeliness of management information, particularly setting good budgets and monitoring variances robustly.

4.4.9 Insurer matches liabilities with correlated investments – see risk-map at Annex E.9

In these cases niche insurers had management who were naïve in not considering the correlation between the risk profiles of their assets and liabilities. They allowed a concentration of investments in assets whose value was likely to be affected significantly by the same events which would lead to large insurance claims, exposing the firm to a 'double-gearing' effect. E.g. in one case a financial guarantee insurer invested in commercial property – both were adversely affected by a deep economic depression which led to severe underwriting and investment losses, exacerbated by the poor liquidity of the investments. In another instance a specialist insurer backed long-tail liabilities with an investment in another long-tail insurer. Procyclical effects should be a particular concern to supervisors of credit and financial guarantee insurers.

The most important tools are to set out the principles for firms to follow, and to have a forward-looking diagnostic tool, to examine firms' investment strategy and their stress testing scenarios and procedures to make sure they test assets and liabilities together and consider correlations. It was not felt to be desirable for regulators to restrict investments in correlated assets as supervisors should not take risk decisions for firms, but should set guidelines for firms to manage their own risks. In any case it would not be feasible as there are too many possible correlations to itemise.

4.4.10 Firms have inappropriate distribution strategies – see risk-map at Annex E.10

In this case study a generic issue was examined rather than individual firms. An inappropriate strategy concerning intermediaries (agents and brokers) was having a number of adverse effects on the insurers, notably high distribution costs not linked to portfolio outcomes, poor customer service, bad or non-existent selection of risks, poor information on customers and pricing control, high claims. This led to underwriting losses, poor client service and, in consequence, lost goodwill.

An internal root cause was identified which was the lack of entrepreneurial drive and desire for change among senior management of insurance firms, so there were few attempts to improve the professionalism of distribution and rationalise the mediation channel.

In this case the most obvious solution is for the supervisor to monitor market trends and adopt an educational role, disseminating this information. Nevertheless, the supervisor can take relevant steps such as requiring improved disclosure of commission levels, application of internal systems and controls or getting

management to focus more clearly on the need for incentives to make intermediaries act in the firm's interests and on the information deficiencies that lead to poor underwriting.

4.4.11 Catastrophe / inadequate reinsurance planning – see risk-map at Annex E.11

When catastrophic losses occur, firms may find that they have insufficient reinsurance. It may be that the firm made a correct assessment of the risks and its exposure to them, and where for instance it has a risk appetite such that its reinsurance programme will be insufficient once in 100 years, this is that 1/100 occasion. More often, however, in the cases we studied the firms had failed to assess the risks and its exposures correctly. Reasons may include flawed assumptions, incomplete data on potential aggregations among risks accepted, failure to model realistically or over-reliance on historical data and failure to appreciate changing risk characteristics (e.g. evolving weather patterns).

We identified that senior management should explicitly monitor the key assumptions being made in determining the extent of the reinsurance cover needed by the firm. Firms should also model realistic disaster scenarios and assess the maximum likely gross losses and then map these against the reinsurance programme to estimate the likely net position. They should regularly reassess the maximum possible loss, and report this as a key assumption.

Another problem that occurred was purchase of reinsurance with additional contractual arrangements in side letters which have a material effect on how the reinsurance will perform but are not disclosed to auditors and supervisors. These are hard to detect except by an astute supervisor realising that a purported reinsurance arrangement is improbable commercially. The most appropriate solution is preventative measures such as obtaining explicit disclosure in writing of all such arrangements, supported by effective personal sanctions against management who misrepresent such matters, and by safe whistle-blowing routes.

4.4.12 Outsourcing of key functions – see risk-map at Annex E.12

In these cases management of firms outsourced an activity and failed to maintain proper control over it. Management should retain overall responsibility for the function, and monitor its performance with sufficient rigour both so that the function itself is performed in line with supervisory and commercial needs (for example not breaching rules or alienating customers) and it does not adversely affect other parts of the business. This did not happen in these cases. The firm either had not communicated the supervisory and commercial requirements to be met, or failed to

monitor them. The outsourced service provider was therefore not focusing on the needs of the insurance firm.

Where the outsourcing was claims management, several problems arise from this, including lost customer and intermediary goodwill, inflated claims payments, higher claims handling costs, and (perhaps most dangerous) weak data on historical claims experience, which can lead to flawed underwriting strategy. A useful tool would be to set out minimum standards for controls over outsourced activities.

4.5 Management is the most common underlying cause

4.5.1 We found that, whichever group they were in, almost all of the case studies shared the same underlying or root causes: poor or inexperienced management, leading to inadequate decision-marking or inadequate internal controls, or a business strategy that was set at group level rather than by local management. Both of these underlying causes led to inappropriate risk decisions. This finding is consistent with studies of companies in other sectors.

4.5.2 Although a well-managed firm can still fail, poor management makes a firm vulnerable and we believe that in practice it is the primary root cause of most problems in insurance firms[15]. We found that poor management can take one or more of the following forms:

(i) management are competent but have an excessive risk appetite or a lack of integrity or independence; or

(ii) they operate outside their field or level of competence;

(iii) they fail to put in place adequate decision-making processes or adequate internal controls.

4.6 Analysing the full causal chain improves supervisory practice

4.6.1 Our analysis of the twenty-one case studies revealed that many different causes, at all stages of a causal chain, could be detected (albeit with varying degrees of effort), and that most of these could also be controlled. The value of detecting and controlling these causes can be considerable since it may be possible to interrupt a causal chain,

[15] The significance of management as a source of risk has been identified by other research. For example, see D Greening and R Johnson (1996) "Do Managers and Strategies Matter? A Study in Crisis" *Journal of Management Studies*, Vol 33, No 1, 25-51; and B Turner (1994) "Causes of Disaster: Sloppy Management" *British Journal of Management*, Vol 5, 215-219.

or at least to lessen its adverse effects, and thereby prevent an insurance company from getting into serious difficulties.

4.6.2 We found, as might be expected, that not every problem requires the same solution; so in order to supervise most effectively we need many different diagnostic and preventative tools. This will enable us to understand and address the full chain of events that can lead up to an insurance company getting into difficulties.

4.6.3 It can be highly valuable to detect underlying causes like management at an early stage even though they are often the most difficult to detect, especially before other more visible causes have appeared (such as an inappropriate risk decision). Underlying causes like poor management can have many different implications throughout a firm's activities. Thus if they can be detected, and subsequently controlled in some way, a wide variety of potentially serious and solvency threatening cause-effect chains could be interrupted at a very early stage.

4.6.4 However, because of the difficulty of detecting and curing underlying causes like poor management directly, we reaffirm our belief that the prudential regime needs to deal also with all the various problems and risks that can arise at later levels of the cause-effect chain, and that capital remains important (see section 5.5 below).

5. LESSONS ABOUT OUR SUPERVISORY TOOLKITS

5.1 General points

In practice supervisors use a wide range of tools

5.1.1 The results of our questionnaire on diagnostic and preventative tools (described in the Methodology section 3.5 above) demonstrate that supervisors already use a wide range of supervisory tools. These tools are discussed in more detail below.

5.1.2 The toolkit is extensive and we saw in the case studies that there were tools to deal with the majority of situations. However, we believe that some of these tools could be strengthened (for instance sanctions against poor management) or re-balanced (for instance a greater weight on forward-looking tools).

5.1.3 We also found that the toolkit varies between countries. For example, one country makes extensive use of electronic reporting by firms and automated analysis of those results to pick up potential problems. Another country relies extensively on on-site inspection including informal dialogue with and co-operation from firms.

Informal tools are important as well as formal tools

5.1.4 We need to consider informal as well as formal tools, although some formal tools and most informal tools are not currently set out in the Directives. Informal dialogue with the firm, as well as with auditors and actuaries and with other participants in the market, is an important part of supervisory practice. It is particularly useful for determining the quality of management and of internal controls.

5.1.5 It is also worth noting the value of alertness to external information about firms and the market, for instance press reports about customer service issues or market rumours about aggressive pricing. In some case studies these provided an important early signal to supervisors that there might be problems. This cannot, however, be used except as an early warning indicator to trigger further diagnostic measures (e.g. on-site visit or request for information for further analysis).

Preventative tools should include incentives as well as restrictions

5.1.6 Preventative tools can include both restrictive tools to prevent undesirable behaviours and incentives to encourage desirable behaviours. Many of the existing preventative tools are of the restrictive kind, for instance restrictions on the types and amounts of different assets that can be held. This protects consumers and reduces the risk of

failure; on the other hand restrictive tools can distort the operation of a free market as firms are less free to operate as they wish.

5.1.7 An example of an incentive that is being implemented instead in some States is a tailored capital framework where better management of investment risk leads to a lower capital requirement. If the framework is responsive and realistic, it should encourage management into similarly prudent behaviour. If on the other hand management have a riskier asset allocation strategy than would be currently allowed, the firm is still safe-guarded as it must have more capital.

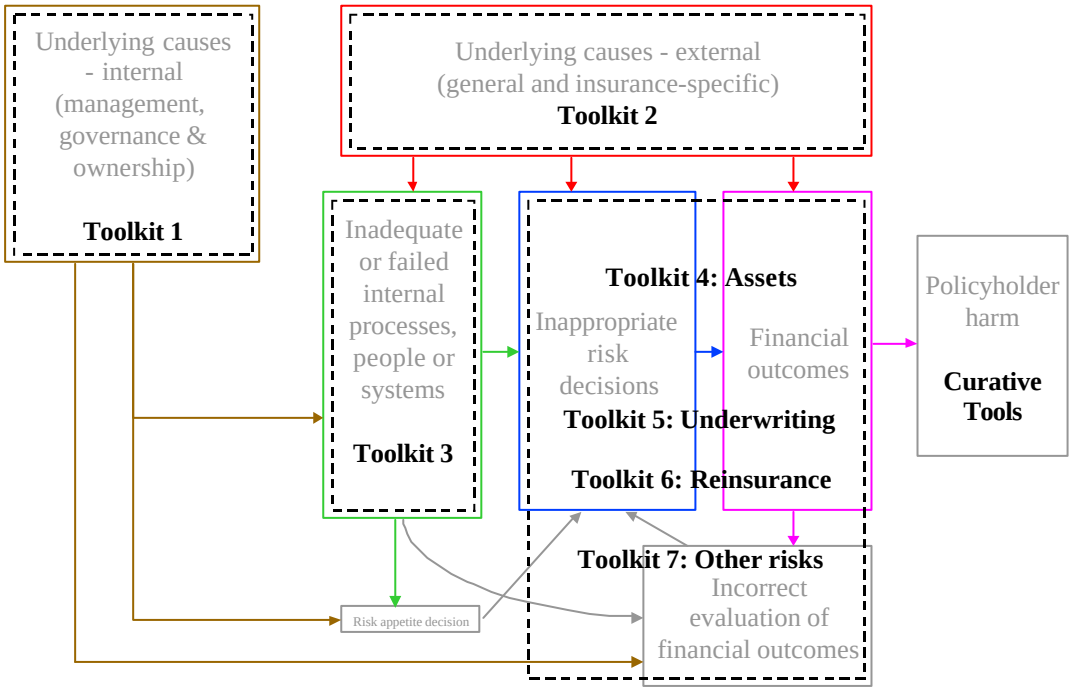
5.1.8 We should encourage other methods for aligning management's interests with prudent management of the business. Examples might include:

- approved persons regime – the threat of a ban for irresponsible managers;
- sanctions on the firm – linked to weaknesses in risk management and control;
- encourage the desired practice – linking capital requirements to effective internal risk models can encourage management to use suitable models, and thus improve management's priorities and approach to running the business.

5.2 Our toolkits map onto risks but need to be shared and supplemented

5.2.1 Because of the different groupings of risks in responses to the questionnaire, we have grouped the risks as shown in figure 5.1 to best reflect this.

Figure 5.1: Toolkits overlaid on risk map



5.2.2 We found that aggregating all the responses gives reasonable coverage of tools across all risks. But individual delegations do not have the full range and need to share tools.

5.2.3 Our findings are presented in the table on the following pages. For each main risk-group we present in columns across a double-page the relevant toolkit, setting out principles for firms and supervisors, the tools common to all or nearly all countries and other tools now in use, and ideas for future tools or new uses of existing tools. Before the tables we note first some general tools that apply across all these groupings to avoid repeating them throughout.

5.2.4 It should be noted that the common tools may not be used consistently by all Member States; for instance, raising awareness of emerging external issues involves regular bulletins, conferences and surveys in some Member States, and only occasional informal contact in others.

Tools range from high-level and subjective to low-level and objective

5.2.5 These principles and tools are organised into four layers, from high-level principles about organisation and governance to low-level principles about intervention. Moving down through these layers, in general the tools become more objective, more formal and easier to apply, but typically also operate later in the causal chain and may be less effective. Conversely, the higher-level tools are more subjective, informal and difficult to use, but can be more powerful and more prospective in nature.

5.2.6 The subjective nature of the higher-level tools makes it difficult to use them to justify intervention as firms may challenge supervisors' assessments, for instance that a firm's culture is too aggressive. The diagnostic tools in particular will only act indirectly, as a key influence on the supervisor's approach and allocation of resources.

Toolkit 1: Underlying Causes – Internal

	What we expect of firms	Our supervisory aims	Tools used by all or nearly all
Organisation and Governance	to have a responsible attitude and culture so that they are aware of the risks that they present to policyholders and are prepared to manage these risks properly.	to align a firm's objectives more closely with ours, so: ? firms have proper incentives for good internal control and risk management; ? supervisors and firms have a common understanding of what we expect from firms; ? supervisors can focus resources on important areas.	On-site inspections to interview senior management, and review internal control policies. Threat of individual sanctions for senior managers (to act as an incentive). Require a firm to have internal control policies and procedures. Group structure should be clear where the firm invests in related companies
Strategy and Decision Making	to have an effective decision making process. This will require a firm to: ? define the roles and responsibilities of the key people and functions; and ? ensure that it has appropriate internal and external resources (both people and IT) for proper execution of decisions (see also Toolkit 3 below).	that a firm's management: ? are responsible for their decisions; ? make appropriate decisions that are aligned with our supervisory objectives; ? ensure that their decisions are implemented appropriately and are properly resourced.	'Fit and proper' requirements for key decision makers (including assessing their competency and being notified of changes in key individuals). Investigate internal control policies and procedures. Review of business plans for new firms and existing firms that enter new markets. See also Toolkit 3 new ideas
Monitoring and Information	to obtain access to the information that they need to make effective decisions. to monitor their operations (i.e. the outcomes of their decisions) effectively and compare these with the business plans.	to give firms primary responsibility for monitoring. firms to provide us with good information to improve the quality of our own monitoring activities.	Review of internal control documentation and of relevant internal and external audit reports. On-site inspections to observe internal control procedures and risk management systems. Exchange of information between supervisors.
Investigation, Corrective action	a firm's shareholders and controllers (shareholders with significant influence, senior management of the company or mutual or of the parent and group) to be both willing and able to take corrective action when needed.	change of management if necessary. more capital to be introduced if there is a shortfall. controllers not to strip value from the firm if this hurts policyholders	Approval of changes in controller, external actuary and auditor. Consultation with supervisors in other sectors in the same country, e.g. banking. See general tools in section 5.3

Toolkit 1: Underlying Causes – Internal (continued)

	Examples of other tools now in use	Ideas for new tools or uses of tools
Organisation and Governance	Assessment of firms' overall culture to influence supervisory approach Require external audit, an actuary (for certain firms), compliance officer, internal audit (complex firms) Board responsible for preventing skills gaps (e.g. underwriting, reinsurance, reserving, operations, finance, IT, compliance) Board certifies compliance with fit and proper tests Restrictions on officers' involvement with other firms. Parent certifies independence of firm. Disclose parent/controllers to allow market forces to act	Reappraisal of competence and suitability regularly and whenever we have had concerns (e.g. after a rule breach). Broaden the scope of on-site inspections by using more forward-looking tools and compliance with accepted current codes on corporate governance and internal control. Find ways to increase the transparency of a firm's corporate governance activities. This would provide a further, market-based incentive for effective corporate governance.
Strategy and Decision Making	Requirement for Board to approve risk management and internal control systems annually Restrictions on outsourcing certain key functions Knowledge of strategic plans of controllers Conflict of interest rules: restriction on officers holding simultaneous positions in other companies	Regular reappraisal of internal control procedures External assurance of the suitability of a firm's internal control procedures. More regular review of business plans (i.e. not just at authorisation).
Monitoring and Information	Requirement to have internal reporting system on internal control. Use annual checklist for annual reporting by firm and/or external auditor on internal controls, including compliance with code of good practice Make all information requests in writing, whether in advance or confirmation afterwards	Better cooperation between supervisors cross-border (e.g. on intra-group issues and contagion threats), perhaps enhanced by a requirement to notify fellow supervisors on certain trigger events or warning indicators Harmonise reporting and data analysis toolkits to help sharing of data and benchmarking across Europe Annual reporting on systems and controls could be by type of risk
Investigation, Corrective action	Duty to report immediately any circumstance with a crucial effect on the future running of the firm. Auditor / actuary have a duty to report breaches or threat to firm's continuity. Consultation with foreign supervisors Localisation of assets or placing them in trust with an approved custodian to prevent misuse or theft Power to impose fines, public censure and restrictions on firms Power to issue instructions to firm or withdraw licence	Better diagnostic tools to assess the ongoing suitability and activities of controllers (e.g. about possible conflicts of interest, financial position, their influence on investment decisions). Better cooperation between supervisors cross-border (as above)

Toolkit 2: Underlying or Trigger Causes – External

	What we expect of firms	Our supervisory aims	Tools used by all or nearly all
Organisation and Governance	to understand their exposure to external risks.	to facilitate firm's understanding of external event risk, e.g. through information exchange between firms and supervisors.	Raise awareness of new and emerging risks.
Strategy and Decision Making	to have a business plan that takes into account fluctuations in the value of assets and liabilities, stress testing under catastrophic and adverse economic scenarios.	to protect policyholders from undue external risks, by requiring firms do as we expect. to back this up by monitoring, either inspecting directly or using auditors or actuaries to report on the quality of systems to manage risks.	Stress-testing and risk assessment of external conditions.
Monitoring and Information	to monitor external market conditions (including the use of auditors and actuaries) and possible excessive and unusual losses so it can mitigate these risks if need be.	to gather market-wide information on external events that firms might not collect on their own.	Monitoring of external market conditions.
Investigation, Corrective action	to have adequate systems and controls that not only consider external event risk, but also enable them to take corrective action where adverse external events are expected.	to know the financial impact of external events on firms and policyholders so that we can take appropriate supervisory action.	Exception reporting by firms in difficulties. See general tools in section 5.3

Toolkit 2: Underlying or Trigger Causes – External (continued)

	Examples of other tools now in use	Ideas for new tools or uses of tools
Organisation and Governance	Publish regular reviews of the market, host seminars	Increase the transparency of a firm's prospective risk exposures
Strategy and Decision Making	Supervisor monitors risk assessments of many firms, and can: ? share good practice on how to assess risk ? benchmark firms and watch or even warn those most exposed (We note that supervisors must not let firms rely on them to identify firms' risks) require catastrophe modelling, and use largest risk to set an additional part of the firm's solvency requirement	Firms should test combinations of adverse scenarios and report the results Harmonise application of stress testing – methods and assumptions
Monitoring and Information	Monitoring potential economic strains on non-insurance parts of the group Liaise with supervisors in other sectors or other countries Market circulars and questionnaires (e.g. after 11 September 2001 US terrorist attacks or recent stock market falls) Themed visits to firms	Set up or make greater use of databases of economic trends and of market ratios, by market segment, class of business, size of firm etc. Seek common standards across Europe to facilitate sharing of data
Investigation, Corrective action	All firms or policyholders pay a levy for a compensation fund On-site visit, discuss mitigation strategies with firm	Special coordination among supervisors in a crisis, including internationally, and rapid sharing of information. In the examples cited above (US terrorist attacks, stock market falls), the Conference coordinated responses.

Toolkit 3: Failed processes, systems and people

	What we expect of firms	Our supervisory aims	Tools used by all or nearly all
Organisation and Governance	to set up clear responsibilities for people, processes and systems, and the skills needed by those responsible.	to raise firms' awareness of possible causes of failures.	Requirement for adequate internal control On-site inspections. Named individuals are made responsible for particular risks and areas of control Imposition of personal sanctions (censure, fines, professional ban)
Strategy and Decision Making	to have a risk management system that is appropriate to the firm's business strategy. This would include: outsourcing and delegated authority; and distribution networks.	for firms to have a risk management system	Requirement for adequate risk management systems.
Monitoring and Information	to establish and maintain effective risk management systems that can identify, monitor and measure failures of processes, systems and people.	to gather our own information on failures. to improve our ability to compare information across firms, e.g. standard accounting criteria. to look for common early warning signals.	Use of internal and external audit and actuary reports on internal controls and compliance with regulations. On-site inspections. Monitoring of risk indicators (e.g. customer or intermediary complaints, data errors and outsourcing).
Investigation, Corrective action	to take corrective action against failures where policyholders may be adversely affected.	to know the financial impact of failures in processes, systems and people on firms and policyholders so that we can take appropriate supervisory action.	See general tools in section 5.3

Toolkit 3: Failed processes, systems and people (continued)

	Examples of other tools now in use	Ideas for new tools or uses of tools
Organisation and Governance	Interview heads of key functions, e.g. general manager, underwriting, finance, IT etc Restrictions on outsourcing of certain key functions Scrutiny of outsourcing arrangements Recruitment, training and qualification requirements for certain individuals within the firm	set detailed internal control requirements and guidance Develop a framework and guidance for supervisors to focus on 'people issues': ? selection procedures ? training and competence ? remuneration and other incentive structures (see also Toolkit 1 above)
Strategy and Decision Making	Risk management plan must include disaster recovery plan, which is tested regularly Consider structure and make-up of agency network, with regular notification of new agents and those no longer used.	Supervisors should develop expectations for firms' risk management systems, for example the complaints register should analyse the underlying cause of the complaint and how the firm is dealing with that cause
Monitoring and Information	Requirement to keep asset registers and accounting records. Automated checks by supervisor on asset registers Verification by auditor or actuary	Develop clearer guidance on how risk management systems might be assessed Greater use of IT for validation and analysis of data.
Investigation, Corrective action	Complaints of errors in payouts trigger recalculation by supervisor to investigate reliability of IT system, rate tables etc. Require data quickly on key indicators or when problems are suspected – and ask for high-quality audited data later to corroborate it	Consider new key risk indicators particularly in relation to retail business

Toolkit 4: Risk decisions and outcomes – investments, credit, ALM risks

	What we expect of firms	Our supervisory aims	Tools used by all or nearly all
Organisation and Governance	their investment decisions should not be adversely affected by group level priorities. to be more transparent where the outcomes of investment risk may adversely affect policyholders. to know what their exposure is to the above asset risks.	that firms understand and recognise the importance of managing exposure to these risks prudently to be able to find out the relationship between firms in a group.	Require a clear group structure if investing in related parties – see Toolkit 1 above
Strategy and Decision Making	to consider the appropriateness and liquidity of the assets in their portfolio, including concentrations and correlations. to have adequate risk management systems to aid investment decision making	to be able to assess how appropriate the investment strategy and risk management systems are.	Require an investment strategy. Review investment strategy Quantitative restrictions on holding certain assets and concentration limits by counterparty and asset type. Require technical provisions to be covered by suitable assets. Review emerging trends in investment markets.
Monitoring and Information	to have appropriate management information and evaluation models.	to have objective and comparable evaluation standards (especially for non-market assets such as real estate). to have external verification of investment values. to have sufficient information to understand the impact of new products and emerging trends in investment markets on firms.	Stress testing for economic conditions. Reporting of asset exposures (including special information on derivatives, real estate, non-traded investments, related party investments and hidden reserves). External verification of values.
Investigation, Corrective action	to have contingency plans ready for coping with adverse market events (e.g. planned rather than panic selling, reducing systemic risk as firms adjust portfolio exposures earlier and at different times)	to reduce systemic risk by persuading firms to reduce exposures when capital is insufficient to bear the asset risk	See general tools in section 5.3

Toolkit 4: Risk decisions and outcomes – investments, credit, ALM risks (continued)

	Examples of other tools now in use	Ideas for new tools or uses of tools
Organisation and Governance	Require Board to approve investment strategy, quality of assets and choice of investment manager, at least annually Publish code on managing and monitoring investments Restrictions on who can act as custodian, e.g. only EU banks	We need a mechanism for linking the solvency trigger level better to the risks to which the firm is exposed, including asset risks. ? consider not allowing assets that are high-risk or over limits to be counted towards matching of solvency margin (already inadmissible for technical provisions) ? consider an additional capital requirement when a firm fails to meet a stress test. Increase the transparency of a firm's prospective risk exposures (see toolkit 1 above)
Strategy and Decision Making	Require investment strategy to be explicit about risk appetite, allocation and spread, use of derivatives, valuation methods, internal controls, segregation of duties, responsibilities, reporting Regularly stress test asset-liability matching (typically 30% fall in equities, 12-15% fall in real estate values, 1% move in interest rates, 0.5% change in inflation) Consider correlations between assets and liabilities Risk-based capital charge for investment risks Limits on unlisted securities, non-hedge derivatives, linked products (e.g. no commodities or currencies)	Develop framework and guidance on asset-liability matching and asset risks, including to identify and deal with new and existing investment products and the associated risk. Consider disclosure of the level of asset/market risk taken by the firm Cross-sector exchange of asset risk information
Monitoring and Information	Calculate maximum loss on non-hedge derivatives per Basel model Standardised valuation rules. Automated checks of values and compliance with limits Custodian holds assets in trust for policyholders Auditor reports breaches of ALM and localisation requirements Disclosure of detailed valuation approach Require regular expert reports on property assets etc Share market information cross-sector	Identify and adapt for investment risk: ? adapting reporting requirements quickly and regularly to aid better risk analysis by supervisors; ? make greater use of existing market databases and credit rating information; encourage use of internal models by larger or high-risk firms for stress-testing or value at risk (VaR) analysis
Investigation, Corrective action	Early warning signals of harmonised financial reporting based on realistic market values. See new tools as well. Localisation of assets or placing them in trust – see Toolkit 1 above Power to impose asset allocation limits or valuation rules on individual firms Inspection and use of experts to assess asset valuation model, especially if firm has higher risk appetite or uses more sophisticated or non-traded instruments	Consider alternative disclosures under alternative valuation principles to identify early asset allocation and matching problems. Supervisor checks plausibility of new capital instruments, e.g. to detect 'cosmetic' use

Toolkit 5: Risk decisions and outcomes – underwriting and technical provisions

	What we expect of firms	Our supervisory aims	Tools used by all or nearly all
Organisation and Governance	to understand the products that they are selling (including hidden options – see also new tools).	that firms understand and recognise the importance of managing exposure to these risks prudently	Fit and proper requirements for management and others involved – see Toolkit 1 above: requirement for an actuary (Life), who is fit and proper.
Strategy and Decision Making	to have a formal underwriting strategy (including use of reinsurance – see Toolkit 6) for pricing etc.; to check that their financial resources are adequate to support the business written.	to ensure that the firm's underwriting strategy does not give rise to undue risk of financial loss for policyholders	Review of underwriting strategy or business plan including how it is carried out in practice (especially where there is delegated authority and/or significant number of distribution agents). Stress testing Valuation rules for technical provisions Authorisation for new business lines
Monitoring and Information	to measure and monitor their underwriting risks: ? to check that actual underwriting complies with their strategy and policies; ? to make use of suitable methods and assumptions when pricing and assessing technical provisions	to gather and/or have access to sufficient data to carry out our own monitoring of technical provisions. This may include educating firms about the information and data analysis required to ensure that technical provisions are correctly assessed	Monitoring of performance including ratio analysis, trends and large or unusual losses. Use of key risk indicators. Sensitivity analysis or stress testing for changes in assumptions External verification of technical provisions
Investigation, Corrective action	to limit underwriting in line with available reinsurance cover and other financial resources; to have feedback mechanisms to adjust pricing based on experience and to amend technical provisions to reflect issues identified.	We want firms to limit large exposures	Scheme of operations for troubled business unit or whole firm See general tools in section 5.3

Toolkit 5: Risk decisions and outcomes – underwriting, technical provisions (continued)

	Examples of other tools now in use	Ideas for new tools or uses of tools
Organisation and Governance	Firm is licensed only if it will have sufficient relevant underwriting expertise. Require firm to show it has enough data to justify the launch of a new product Requirement to have an actuary (Non-life, all firms or certain classes of business)	Require peer review of underwriting for specialist or high-risk classes of business (e.g. employers' liability) Firms value hidden or embedded options on a consistently and realistically (market value). Increase the transparency of a firm's prospective risk exposures (see toolkit 1 above)
Strategy and Decision Making	Requirement for an underwriting strategy Require catastrophe modelling – see Toolkit 2 above Review quality and suitability of underwriting checklists Informal discussions with auditors, actuaries, insurance association, reinsurers Actuary advises on sensitivity analysis on pricing policy Supervisor sets interest rate and mortality table to be used for reserving Risk-based capital charge to reflect underwriting risk	More regular or systematic review of underwriting strategy to assess risk appetite of firm Life companies should model foreseeable investment yield model to ensure that contract commitments can be met, forecast for at least five years, updated regularly. Regular interview with appointed actuary Consider disclosure of the level of underwriting risk taken by the firm
Monitoring and Information	Reporting of disaster modelling inspection of aggregate exposure monitoring system Regulations set out permitted reserving methodologies Actuary reports on reserves, including claims and reinsurance experience, and reserving assumptions electronic claims exception reporting on certain classes Require public disclosure of modelling principles and assumptions to disseminate good practice Supervisor reperforms reserving calculations on several bases to get a consensus estimate	Development of new key risk indicators and improvements in data collection to facilitate analysis Create and share databases on trends in key areas such as longevity, asbestosis, litigation, claim handling costs etc. Extend use of electronic exception reporting on triangles to premium, reinsurance, other classes Develop stress and scenario testing techniques to project future behaviour of technical provisions depending on a mix of assumptions about loss development and market factors.
Investigation, Corrective action	Review annual company accounts or regulatory return for evidence of new or unauthorised business Supervisor, actuarial department or external experts inspect internal claims evaluation model and assumptions if any early warning signs are seen Equalisation provisions are used to dampen claims deviation effects from infrequent events.	Consider a mechanism for assessing how market problems are corrected, e.g. a special report

Toolkit 6: Risk decisions and outcomes – reinsurance risk

	What we expect of firms	Our supervisory aims	Tools used by all or nearly all
Organisation and Governance	to use reinsurance for proper commercial purpose, not to mislead	to understand the commercial effect of 'cosmetic' treaties that firms understand and recognise the importance of managing reinsurance risk prudently	review contracts for evidence of 'cosmetic' use Requirement for an actuary (Life) and auditor
Strategy and Decision Making	to have a reinsurance plan aligned with their underwriting strategy (see Toolkit 5 above) to have reinsurance cover that is effective, and properly placed with reinsurers of appropriate security	to assess the effectiveness of the reinsurance plan and cover	Require a reinsurance strategy restrictions on levels and concentrations of reinsurance
Monitoring and Information	ongoing monitoring of credit worthiness of reinsurers and liquidity	that the firm properly reflects the reinsurance treaties in the accounts so that they are not misleading to identify reinsurance relationships which are imbalanced over the long-term to monitor the reinsurance market for credit risk, liquidity, emerging trends	Review of reinsurance programme (including contracts) report of reinsurance cover and counterparties Stress testing External verification Key risk indicators (ratios, reinsurance balances, deviations from plan, concentrations)
Investigation, Corrective action	to have adequate reinsurance cover (see Toolkit 5 above)	to be able to intervene early and effectively where needed, often by informal action	See general tools in section 5.3

Toolkit 6: Risk decisions and outcomes – reinsurance risk (continued)

	Examples of other tools now in use	Ideas for new tools or uses of tools
Organisation and Governance	The Board must certify that the reinsurance programme is a complete and accurate picture of reinsurance arrangements Requirement for an actuary (Non-life)	Board to certify specifically that there are no undisclosed side-letters or other hidden or unexpected financial effects New systems and controls requirements and guidance on the use of alternative risk transfer techniques Increase the transparency of a firm's prospective risk exposures (see toolkit 1 above)
Strategy and Decision Making	Reinsurance plan includes stress testing against large losses (realistic disaster scenarios and largest losses in the last ten years by class) – see also Toolkit 2 above Firm must notify supervisor in advance of significant changes in reinsurance strategy Requirement for firm to document how legal risk and possible reinsurance credit risk are minimised	Tighten specification of disaster modelling to accompany reinsurance plan Earlier and more regular review of reinsurance strategy and programme
Monitoring and Information	Reporting of counterparties by credit rating for aged exposures and allocation of technical provisions and IBNR Supervisor maintains knowledge of market norms from discussion with firms, reinsurers and insurance association, and monitoring of the press	Build reinsurance database to help share information between supervisors Improve regulatory reporting with a tighter specification to improve consistency and usefulness of data submitted, e.g. standardised information by class / business segment / product, financial results in summary and by contract, identification of reinsurers etc
Investigation, Corrective action	Disallow reinsurance receivables and cosmetic 'financial' reinsurance from counting towards the solvency calculation	Adjust solvency requirement for cosmetic treaty cash-flow effects

Toolkit 7: Risk decisions and outcomes – other risks and general tools

	What we expect of firms	Our supervisory aims	Tools used by all or nearly all
Organisation and Governance	to have adequate internal control to have a fair attitude in dealings with customers	that firms understand and recognise the importance of managing exposure to other business risks prudently	on-site inspections: interviews and scrutinise board minutes, plans etc
Strategy and Decision Making	to set a realistic business plan and strategy in line with capital and other resources (e.g. people, systems) to restrict themselves to insurance activities	to raise awareness and share ideas on 'operational risks', but exercise restraint to where we can add value or where there is increased risk (e.g. new business or change of control)	require a business plan and strategy review business plan and accounts restrictions on activities
Monitoring and Information	to be aware of the commercial risks from their operations and manage them in line with resources	to assess the financial effects of deviations from plan for expenses etc.	Detailed analysis of annual published company report and accounts, and regulatory return key risk indicators (e.g. expense ratios, intermediary balances, deviations from plan, rapid growth) notification requirements (e.g. money laundering)
Investigation, Corrective action	restriction to insurance activities as above to have feedback mechanisms to review strategy in the light of issues identified	to be able to intervene early and effectively where needed, often by informal action	See general tools in section 5.3

Toolkit 7: Risk decisions and outcomes – other risks and general tools (continued)

	Examples of other tools now in use	Ideas for new tools or uses of tools
Organisation and Governance	Require firms to set up Customer Service Departments to deal with complaints about unfair treatment Restrictions on outsourcing customer-facing departments Require firms to publish in their annual report a full risk analysis, including risks to their future development.	Increase the transparency of a firm's prospective risk exposures (see toolkit 1 above)
Strategy and Decision Making	Supervisor reviews fairness and compliance of motor liability cover and new Life products (review does not cover pricing but its consistency with the firm's financial situation and reserving assumptions). Details must be notified within 60 days Require stress testing of all forecasts and assumptions in business plan Informal discussion with internal and external auditor and actuary Set concentration limits on illiquid assets	develop skills and tools to help analyse a business's viability through its budgets and plans
Monitoring and Information	Set a code of conduct and procedures for sales over the internet or through bank branches Review quality of internal monitoring of business plan and variances Firm shows it has considered the potential impact of a large claim or run of claims (gross and net), e.g. on US losses where the firm needs to fund gross liabilities Reports on related party transactions, loans, guarantees etc.	Supervisor requires regular submission of and uses internal management information on performance, deviation from plan etc.
Investigation, Corrective action	Power to get related party information within supplementary supervision framework Power to ban the marketing of unfair Life and Motor Liability products – more usually the firm is invited to review certain aspects of its products Set up ombudsman to be consumer guardian and to resolve disputes Scheme of operations triggered by change of control, restructuring etc. Firm's duty to report any threat to its continuity or its policyholders' interests.	Supervisors have a duty to inform fellow supervisors in other countries where a firm operates on certain triggers, e.g. fit and proper or governance concerns, misselling, fraud, serious internal control failures

5.3 General tools

5.3.1 On-site inspections supported by a right to information (see information sources below), and systems of early-warning indicators (see 5.3.9-12 below), are not allocated to individual toolkits as they apply across a wide range of risks.

5.3.2 A summary of the preventative tools from the case study discussions is at Annex F.

Sources of information

5.3.3 Our discussion of the case studies showed that supervisors pick up issues in a number of different ways. For example, we found that on-site inspections, such as interviews and the examination of documents on underwriting policies and controls, often provide a lot of valuable qualitative information such as an impression of the culture of the firm. On-site the supervisor can observe business practices and see systems in operation. A further benefit is the opportunity to question and challenge management in a dialogue about matters arising and to pursue a line of enquiry further on the spot with direct access to the firm's documentation. However, such inspections take time and there is often little chance to corroborate information provided or to benchmark assertions made by management. Although periodic routine inspections take place, focused inspections on an issue of concern are usually only triggered by some prior early warning indicator. Only in a few case studies did an alert supervisor on a routine visit identify warning signs, for instance a breach of unlisted investment concentration limits that indicated a potentially lax compliance culture or conflicts of interest.

5.3.4 Information provided voluntarily by firms is also a valuable source of information. Some states place more reliance on informal contact with management than others, and those that do tend to highlight this as the reason, that a good relationship and mutual trust help such communication. Another important factor is the supervisor educating the firm through dialogue over time about what sorts of things he or she really wants to hear about.

5.3.5 During the exercises performed, we found that information is currently gathered from:

voluntary notification by firm
interviews (directors, managers, internal audit, appointed actuary, external auditor, other advisers, parent and its officers and shareholders)
supervisor's informal assessment of motivation / culture while on-site
scrutiny and analysis of financial returns - absolute figures, ratios, historical trends, comparison with peers

internal financial information, e.g. management accounts, analysis by branch, debtor analysis, tax situation, claims records
forward-looking information, e.g. ? business plans (types of business, strategy for distribution, underwriting, investment etc, reinsurance programme, 3-year budget and liquidity forecast) ? catastrophic scenario modelling of gross and net claims ? disaster recovery plans
governance records, e.g. ? Board and committee minutes, make-up of Board ? group structure, staff organisational chart ? risk analysis ? audit management letters ? correspondence with auditors or actuaries, legal files
operational information, e.g.: ? policies and procedures manuals ? internal control process maps and reporting systems ? complaints log, regulatory breaches log ? internal audit plans, reports and follow-up actions ? third party service agreements ? training plans ? cost allocation methods ? distribution channels ? publicity (advertising, press releases, analyst reports)
incidental, e.g. visit for another reason and then find a problem
correspondence or discussions with the appointed actuary (Life), auditors or other external experts, or reports commissioned from them
information provided by fellow supervisors
rating agency reports, press reports, market rumours
complaints to the supervisor from customers or market participants
whistle-blowing (by the auditor or actuary), or tip-offs from other market participants
personal information: ? CV (qualifications and employment history) ? proof of address, personal questionnaire (other directorships and financial sector professional positions (current and previous), convictions, disqualifications, bankruptcy etc) ? police checks and checks against other registers e.g. special supervisory register, bankruptcy etc

5.3.6 Whistle-blowing by employees of the firm did not feature in any of the case-studies considered, although it was mentioned during discussions as another information route. It has some specific problems and weaknesses, often being too late, or too early and imprecise to be useful, and motivation can be complex.

Notification requirements could include anticipated as well as actual breaches

5.3.7 Firms could be required to notify the supervisor of all significant events not only when they occur but when they are anticipated (but further work is needed to determine whether this could be practical, in other words not too bureaucratic but with a useful level of significance – e.g. 'has a material impact on solvency ratio', or indicates a 'material conflict of interest of senior management / controllers') – this is important so that sanctions can be taken against management for holding back relevant information, and lack of openness can be a trigger for intervention;

5.3.8 Similarly, auditors and actuaries could have a duty to report potential breaches as well as actual material breaches[16] to the supervisor. Again, the level of likelihood in 'potential breaches' will need to be defined.

Early-warning indicators

5.3.9 Early-warning indicators can be quantitative or qualitative. Automated exception reporting can efficiently provide valuable early warning of changes or unusual trends such as a sudden surge in non-life claims. Quantitative indicators included:

low solvency margin relative to the firm's risks
rapid growth, declining profitability
high expenses and low profitability
sudden increase in technical reserves
marked decrease in technical reserves
significant divergence from budgets and business plans
concentrated investments, particularly in related entities
consumer or intermediary complaints (direct to supervisor, or logged at firm)
new classes of business / sources of business
identification of reinsurance arrangements, often large in relation to the firm, which appear inconsistent with normal commercial practice or for which the commercial rationale for either party is unclear.

[16] see post-BCCI directive 95/25/EC *reinforcing supervision*, article 5.

5.3.10 Qualitative early warning signals were also a significant feature in case studies. Some signals indicated pressures on management to achieve certain results or targets, for instance due to a stock market listing or imminent acquisition. Pressure could also arise from a culture of fear where one or more dominant individuals intimidated management and staff into behaviour such as suppressing information or distorting results. Other signals provided evidence of poor management, for instance poor quality internal information, not acting on supervisors' or auditors' recommendations, departure of key staff or non-cooperation. It was noted in more than one case study that the supervisor first became aware of management problems in an apparently peripheral area, which later turned out to be symptomatic of a deeper malaise.

5.3.11 Qualitative indicators may be identified through analysis of financial information that can be a proxy. During discussion of the case studies, the following qualitative indicators were identified:

change of strategy
new classes of business / sources of business
crude underwriting strategy (pricing and risk selection), e.g. little or no segmentation compared to peer group
changes to or delays in implementing original business plan
failure to implement previous supervisory advice or requirements
non-cooperation with supervisor or delays in producing information
poor quality information, for example an unrealistic or incomplete business plan
poor response to or inaction about audit management letter
vulnerability to legal or fiscal changes
mergers, acquisitions or other significant transactions that may put pressure on management
apparently peripheral problems, particularly those suggestive of lax management attitude, e.g. minor breaches of investment rules, and particular where there is a pattern of this.
identification of types of reinsurance arrangements which appear inconsistent with normal commercial practice or for which the commercial rationale for either party is unclear.
consistently claiming to be better than the main competitors
consumer or intermediary complaints (direct to supervisor, or logged at firm)
excessive bonus or other unusual remuneration or incentives

5.3.12 Aggregate market premium data analysed by product (in more detail than the Directive business classes) could be useful for benchmarking and identifying new product areas (to ensure adequate expertise) and surges in market share (that might indicate under-pricing). However it is hard to strike the right balance of costs and benefits between supervisory data needs and the burden this places on firms, and also hard then to agree on an appropriate detailed segmentation.

General preventative tools

5.3.13 General preventative tools may include:

- increased transparency, which can deter deviation from good practice by making it more obvious to the supervisor and to other market participants;
- there could be guidance on intervention if management is considered to be exposing the business to excessive risk, e.g. through high-risk strategy or inappropriate investment policy (although it is recognised that it may be hard to make these judgements);
- making it a breach of fit and proper tests to withhold crucial information or engage in knowingly opaque practices (e.g. undisclosed material side letters). This could bite as a preventative measure relying on the threat of future personal sanctions, if fit and proper rules are an ongoing requirement, continuously applicable, rather than just a test on authorisation. An alternative adopted by at least two countries is to request everything in writing so there is evidence if management are found to have withheld material or misled the supervisor; and
- mechanisms for firms or persons to report suspicions of improper, harmful or risky practices, with confidentiality and strong whistle-blowing protection for those doing so, as a disincentive for firms to engage in improper practice under cover of a culture of fear or complicity.

5.4 Other curative tools are used in conjunction with capital injections

5.4.1 We concluded from the results of the actual failures questionnaire (Annex C) that firms rarely recover from a difficult situation without fresh capital, either as a capital injection by a parent or partner, or by a better-capitalised firm taking over the portfolio. This confirms our view that capital remains a highly effective curative tool in the first instance (see section 5.4 below).

5.4.2 However, the underlying causes also need to be dealt with as a matter of urgency in such cases to prevent the problems from recurring and eroding the fresh capital. Current supervisory practice includes a range of measures to deal with the most serious cases, including:

imposition of a scheme of operations – this can have a diagnostic and preventative role, to check management have a viable plan and to monitor its performance;
compulsory portfolio transfers (in most States), takeover, change terms of business or withdraw from certain types of business
closing the fund to new business
requiring additional reinsurance
requiring a capital injection
other specific measures such as asking the firm to appoint specialists or skilled persons; requiring a change in asset mix, or placing restrictions on investments in certain asset-types.

5.4.3 Examples of other curative tools in use include:

informal action – draw issues to management's attention (highly effective where management are cooperative)
change of management
require a transfer of business
improvements in procedures
compliance with rules / rectification of breaches
correction of reporting errors: full recognition of losses
rehabilitation plan / refinancing scheme
close monitoring of solvency
close monitoring execution of agreed reorganisation plan

Early intervention methods

5.4.4 The actual failures questionnaire surveyed the early intervention measures available to States under the Directives, and any lead-time problems regarding the implementation of these measures.

5.4.5 When there has been no breach of margin requirements, restoration plans or short-term finance schemes can be used only where the firm fails to maintain adequate level or cover of the technical provisions. Some countries focus on these; many countries can also freeze the firm's assets; and lastly others have a highly developed arsenal, although this may be under the more general provisions for intervention.

5.4.6 Most delegations did not mention any specific lead-time problems. One delegation reported the lead-times between first knowledge of possible difficulties and the adoption of penalties; these lead-times in fact result from the addition of several lead-times of further procedures once there are investigations and on-the-spot inspections.

Use of curative tools in practice

5.4.7 The survey asked how many firms have undergone the following measures:

(i) restoration plan, with or without a short-term finance scheme;

(ii) withdrawal of authorisation (or compulsory transfer of the portfolio); or

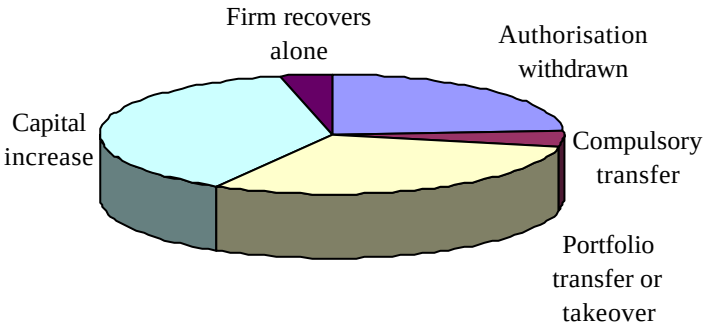
(iii) safeguard measures imposed alone (for instance, freezing of assets).

5.4.8 The following figures show respectively the number of firms subject to measures and the eventual outcomes for the 85 'failing' firms:

Figure 5.2: Measures taken for firms at higher risk of failure

Measures taken (see above)	restoration plan	stop business	safeguard only
Number of firms	70	15	30

Figure 5.3: Outcomes for failing firms



5.4.9 It is hard to tell whether transfers and takeovers are due to market forces or supervisory influence. The same holds to a degree of capital increases – most capital increases are from the main shareholder, with only a few from a new partner. Companies rarely fail unless the main shareholder withdraws support.

5.4.10 In only three cases were companies able to recover alone, for specific reasons from which it is difficult to draw conclusions. Otherwise, it is clear that a failing company

rarely recovers without external help. Solutions that safeguarded policyholders' interests nearly all involved an external partner injecting capital or taking over the portfolio.

5.5 Capital has a preventative and curative role in the prudential regime

5.5.1 The main conclusions of the actual failures questionnaire included confirmation that the EU minimum does not act as an effective early warning indicator. The current EU minimum was intended not as an early warning indicator but as the ultimate trigger for intervention. The buffer to absorb losses arising from the various risk exposures is actually the capital of the firm. We support this preventative purpose as a buffer is needed for variances even in well-managed risks, and we also feel that a higher early warning level (IAIS refer to a 'solvency control level'[17]) is needed, which can trigger intervention before the company is close to breach of the minimum limit. Firms will respect this higher level more if there is a clear link to action, for instance if it triggers imposition of a scheme of operations.

5.5.2 We concluded that the minimum and the early intervention levels in particular need to be better correlated to the types of risk they are to cover. This will make the relative size of the buffer more appropriate to the firm's circumstances, and make the early warning level more accurate and responsive.

5.5.3 The main focus of the current Directive regime is on capital and solvency. But capital and solvency weakness usually result from other, prior risks and decisions, and although they are a useful warning indicator they are rarely early. The near misses questionnaire (see Annex D) showed that, in a significant number of cases, problems can be identified and even resolved long before solvency thresholds are breached. This demonstrates that the solvency regime captures only some of the situations which require supervisory attention. Supervisors need, and indeed have, a wide range of other tools and practices, not currently covered by the Directives.

5.5.4 Capital also provides a key mechanism for damage limitation, as one of the most immediate curative tools available to supervisors is to require a capital injection, although this needs to be coupled with measures to address the underlying causes to prevent the problems from resurfacing.

[17] See IAIS Core Principles No. 5 *Capital adequacy and solvency*, and IAIS Solvency Sub-committee: paper on solvency control level.

5.5.5 Possibly the most powerful potential purpose of capital responsive to risk is that it can also be an incentive for the firm to manage its risks well as better risk management will result in a lower solvency requirement and early warning level (see 4.3.2).

5.6 Subjective assessments and early diagnosis are the most difficult areas

5.6.1 We face growing challenges as we adapt to the changing supervisory environment, which make experience and broader toolkits increasingly important. The main challenges that we need to deal with are:

- ? developing forward-looking tools (e.g. need to focus on this year's reinsurance programme and plans for next year's as much as on last year's);
- ? more subjective judgements, for instance about the quality of systems and controls, which are inherently more difficult and more open to challenge;
- ? helping us detect inappropriate mentality or culture among management before it has harmful effects, and finding effective tools for curing or preventing it;
- ? assessing, preventing and dealing with inadequate corporate governance and internal control; and
- ? finding an appropriate level of capital that is related to the risk exposure of the firm.

5.6.2 Qualitative change in a firm is often gradual, making it hard to determine a trigger point – examples of such changes include gradual loss of autonomy, increasing pressure from controllers outside the insurance firm, changes in responsibilities or changes in business strategy. Also, it can be difficult to get early warning of management problems, particular when economic conditions are favourable and claims experience benign – see section 5.3.11 above for some qualitative early warning indicators that may be useful.

5.6.3 When a firm is holding significant unlisted investments, it can be difficult to determine why they chose to invest in them, and also how the firm should value them. More generally, management's motivations can be hard to assess. On-site visits and face-to-face meetings with senior management would seem the appropriate way to deal with this.

5.6.4 Incomplete disclosure by management can be difficult to spot, for example whether there are any side-letters to a firm's reinsurance arrangements. Experience can help the supervisor to identify a contract potentially out-of-line with normal commercial practice (see 5.3.9ff early warning indicators). Non-disclosure is more likely where

the firm is heading into difficulties, so again a range of early warning indicators may be useful here to increase the supervisor's alertness. See also under general preventative tools in section 5.3.13 above.

5.6.5 Fit & proper rules also present challenges, as it can be hard to decide when someone has become unfit. In some case studies, senior management's experience may have been appropriate when they took up their posts, but the business and marketplace has evolved around them while their knowledge becomes more out-of-date. We recommend periodic reassessment including re-analysis of the firm's business and environment, and in particular where there is any change in its strategy.

6. CONCLUSIONS FOR SOLVENCY II REVIEW

6.1 The need to adapt to a changing market

6.1.1 There is a trend towards increased competition and greater freedom for insurance companies[18]. In this new environment, market forces can work in conjunction with regulatory control and prevention to protect the welfare of an insurance company's customers and other stakeholders. As supervisors we need to maintain a balance between these two forces.

6.1.2 The effects of this change are as follows:

- ? regulators need continually to share ideas and adapt the prudential system to ensure that in this period of greater freedom and competition, the benefits of regulation are maximised and its costs are minimised;

- ? supervisors have to understand the new freedom that insurers have in the market and they also need to look at new indicators and comparisons, and to use new tools including incentives for adequate risk management;

- ? supervisors need a common framework to deal with increasingly shared cross-border issues, including standards for informal as well as formal practices, although there is a balance to be struck between this and not codifying practices too inflexibly;

- ? management need to be able to cope with this new freedom and increased competition and to manage their firm's risks properly, using modern risk management techniques; and

- ? market participants (product markets, capital markets) need to adjust to the new environment, supported by increased transparency, to help maintain confidence of investors, shareholders and policyholders in the industry and to allow market forces to operate efficiently. Increased transparency will also assist in effecting change by focusing management on the new market environment and its associated risks.

[18] Some of this increase in freedom has arisen as a result of the detariffication that has occurred in many member states in recent years. This did not come out clearly from the Müller report, as it was a recent phenomenon at that stage and the effects were less readily apparent.

6.2 General aspects of a new supervisory approach

The costs and benefits of regulation

6.2.1 As stated above, we need to find the right balance between supervisory control and prevention and maintaining an insurer's freedom of operations. On the one hand, too much freedom means that the less experienced or the irresponsible are more likely to get into difficulty than under a prescriptive and strongly preventative regime. On the other hand, too many preventative tools would restrict insurers' freedom to the extent that they become uncompetitive, and the market may stop operating efficiently. Some external events cannot be prevented, although tools can help prevent firms from being ill prepared.

6.2.2 Similarly, the need for better diagnostic tools and better sharing of information across Europe must be balances against the substantial costs these may lead to for firms, both in developing systems and the burden on senior management time. This analysis of costs and benefits may vary with the supervisory philosophies of different Member States (see section 2.5.5).

A three-part approach is needed

6.2.3 In order to ensure the right mixture of being prepared and resilient we need a prudential regime that addresses risk in three main ways:

(i) it needs to ensure that insurers are able to cope financially with the effects of the risks that they are exposed to;

(ii) it needs a range of early-warning indicators and other diagnostic and preventative tools that help us to detect and correct potential threats to the solvency of insurers before their full effects materialise;

(iii) finally the regime needs to pay more attention to internal factors such as the quality and suitability of management, adequate corporate governance practice and codes and an insurer's risk management systems.

6.3 Part 1: Capital adequacy and solvency regime

6.3.1 In order to maximise resilience in the insurance industry capital requirements should be geared around both the exposure of an insurer to those risks that can threaten its solvency and its internal mechanisms to prepare for and potentially mitigate these risks. Thus the more risk a firm faces the greater should be its capital requirements.

6.3.2 Some countries may also benefit from increasing their focus on asset quality, liquidity and asset-liability matching. We note the recommendations that were made in the Müller report about extending asset rules to all assets, not just those matching technical provisions as technical provisions can deteriorate fast. In particular we would recommend that:

- assets held with related parties on a non-commercial basis and other assets which are not readily marketable should generally be inadmissible for the solvency calculation.

- supervisors should require firms to have in place an investment policy that covers strategy (level of risk, mix), allocation limits (counterparty, industry sector, geography, type of instrument, currency), use of derivatives, liquidity, related party investments, correlation to risk profile of liabilities.

- supervisors should require firms to have in place effective monitoring and control procedures over investments

- transparency should be improved by enhancing the public parts of regulatory reporting.

6.3.3 We believe solvency levels should be linked to a firm's exposure to risk. This is a difficult area and we recommend that further work should be done on this, perhaps by the European Commission, to look at the feasibility and suitability of such a system.

6.3.4 Encouraging firms to use internal models can assist with the assessment of trigger levels and the very exercise of designing and managing the model can have useful behavioural effects on management quality and risk management systems. This is because internal models get senior management to consider, in a systematic way, the risks to which their company is exposed and the impact that these risks might have on their strategic thinking and capital allocation.

6.4 Part 2: A broad range of tools is needed to cover the full causal chain

6.4.1 In practice all sound supervisory systems involve a mixture of being prepared and being resilient. Our current solvency regime, embedded in the existing Directives, puts a lot of emphasis on financial resilience, by ensuring that insurers have sufficient financial resources to recover from adverse effects. Supervisory practice in Member States also tends to focus on the technical areas. However, our work suggests that a supervisory system is needed that can tackle not only financial effects but also the underlying and intermediate causes of these effects, with a view to addressing

problems before they occur. In short, we need a system that is equipped to deal with the widest possible range of risks and all stages in the cause-effect chain.

6.4.2 Early identification of potential problems is particularly useful, as intervention is likely to be more effective and less intrusive. To this end, any gaps identified in early warning indicators should be filled, where possible. This particularly applies to those indicators that might be sensitive to the presence of key underlying causes like management (see section 5.3.11). Forward-looking information often acts as a powerful early warning indicator as well, by indicating how thoroughly and prudently management plan their business.

6.4.3 Tools related to management, e.g. dismissal, are rarely used at the moment. This is partly due to the difficulty of identifying root causes as discussed in section 4.1.3 above. This may also be partly because it is harder to prove management failure to justify applying supervisory tools to deal with weak management, and so such action is open to legal challenge. Informal action to improve management may often be more effective, although supervisors might benefit from a wider range of formal tools in this area. Formal tools could be made easier to apply by making clearer management's responsibilities and the criteria by which they may be judged to have failed.

6.4.4 There is much good supervisory practice at the moment that naturally falls outside the solvency regime (for instance many of the informal tools and qualitative measures noted in chapter 5). We have matched current tools and ideas for new tools and new uses of tools to a set of principles within each 'toolkit', and we believe that it may be helpful to capture some of these principles in the Directives. The details of the tools could be left to be filled in under the Lamfalussy process. However, in no way do we conclude that all supervisory practice needs to be covered by the Directive, although it may be helpful to bear some of this practice in mind.

6.4.5 Use of protocols developed by Working Groups will be increasingly important to support Directives. This fits in with the Lamfalussy process, both for developing technical interpretation of principles codified in the Directives, with the same legal status as the Directives, and for sharing supervisory practice more informally.

6.5 Part 3: Internal factors

6.5.1 Here we draw together our findings and suggestions for tools to focus particularly on the difficult areas of assessing management quality and the adequacy of internal systems and controls.

6.5.2 We need an increased focus on management (see sections 4.6.3 and 5.6), which may include a fit & proper regime, examining the individual's suitability in the context of a particular post and set of responsibilities within the firm. In particular the fit & proper regime and allocation of responsibilities must be the Board's responsibility as a crucial part of corporate governance. Balance is needed in applying such rules to make them effective and not too bureaucratic – an informal assessment rather than ticking off large checklists. Supervisors also need increased focus on group issues, particularly remote control by group controllers of local insurance operations.

6.5.3 We need a framework for assessing the corporate governance culture and quality of risk management within a firm as a key means of assessing the level of risk that firm poses to our objectives, which in turn will determine how much resources we direct at it. We envisage this cultural assessment being informal and private to the supervisor. Some delegates also suggested that this could be a factor in an assessment of a firm's risk exposure linked to solvency requirements (see 6.3.4 above), while others felt that the degree of subjectivity involved and the potential for legal challenge would make this impractical.

6.5.4 Boards of directors should be required to set standards for underwriting risk, asset management (market risk, credit risk, liquidity risk), and operational risk (e.g. outsourcing policy) that would be available for the supervisor to request and review.

6.5.5 The Directives could set out broad principles and outline requirements for risk management systems and controls, possibly setting out categories of risk to be addressed. Member states would then fill in the detail, or it could be agreed through Lamfalussy; perhaps Member States should publish their requirements to help ensure a level playing field within the EU. The treatment for different firms should be graded, as smaller firms would not be expected to have the same systems as a large multinational.

6.5.6 It is crucial that management always remain responsible for the business. So, for example, where management rely on the actuary or external advisers for assistance with modelling, they are still responsible for the suitability of assumptions made and should oversee the model and at least satisfy themselves that the results are reasonable.

6.5.7 We should encourage methods for aligning management's interests with prudent management of the business (see section 5.1.8 above). Supervisors should also monitor the firm's own incentives for senior management, for example remuneration and sanctions based on forward-looking factors (e.g. strategic success) rather than

short-term profitability or growth indicators – e.g. long-dated share options. This should be balanced by discouraging firms from increasing senior management's risk appetite by skewed rewards, i.e. huge bonuses for reaching ambitious targets, but little penalty for under-achieving.

6.6 These challenges mean we need both experience and international cooperation

6.6.1 We have noted above the increasing difficulty of supervision, particularly in section 5.6. We have found it extremely useful to be part of this Working Group and share past experiences, current practice and ideas for future developments in detail. We will need to do this more and more.

6.6.2 We need a better means of sharing tools to get full coverage of the risk map, but many are not suitable for formal codification, so we may need other mechanisms for pooling ideas and good practice between European supervisors.

Recommendations for further work

6.6.3 Existing or future working groups of the Conference should take the following action:

- ? build on the Helsinki protocol to develop better communication and co-operation with other supervisors (home supervisors of other sectors, and foreign supervisors), enhancing notification requirements and agreeing a set of triggers;
- ? harmonise the more common early warning signals (possibly linked to triggers for notification to other supervisors mentioned in the previous point), and share practice on more detailed early warnings;
- ? improve focus on risk management and internal control, perhaps giving more detailed guidance and developing expectations, and suggesting which parts might be codified formally and which left for supervisory guidance (Madrid Working Group);
- ? develop guidance on assessing and dealing with 'people issues', including selection, training and competence and incentive structures, perhaps building on the work of the Fit and Proper Working Group;
- ? exchange ideas and practice on supervising stress test methods and assumptions;
- ? develop a framework and guidance on asset-liability matching and investment risk, underwriting risk, reinsurance risk and business risk, including:
    - ? assessing firm's risk management
    - ? reporting

- supervisory monitoring

- seek common data standards to facilitate sharing of information (bearing in mind the potential costs for firms); and
- make contingency plans and set up mechanisms in advance to share information rapidly in a crisis, e.g. after the US terrorist attacks on 11 September 2001 or the recent drops in capital market and consumer confidence, and coordinate action internationally.

6.6.4 We also recommend that the European Commission should:

- consider developing a way to link the solvency trigger level to a firm's risk exposures; and
- establish ongoing mechanisms for dealing with technical issues, including valuation of specific products and emerging problem areas.

ANNEX A LIST OF MAIN RISKS IDENTIFIED

Underlying causes – internal	
Management & staff competence risk	The risk that management, staff or other "insiders" lack the skills, experience or other personal or professional qualities to enable them perform their tasks adequately and successfully. It includes the risk of over-reliance on one or more persons, ("key person risk").
Internal governance & control risk	The risk of inadequate or failed systems of corporate governance and overall control, including the risk that arises from an inadequate control culture.
Controller & group risk	The risk of inadequate or inappropriate direction, control or influence from connected persons (natural or corporate) including from major shareholders, parent undertakings and other group undertakings and the management of those undertakings.

Underlying or trigger causes – external	
Economic cycle/condition risk	The risk of adverse change in the economy, including adverse changes in economic variables such as interest, inflation and exchange rates.
Market competition risk	The risk of adverse change within the insurance markets, including increases or decreases within a market of the demand for, or supply of, insurance products.
Social, technological, demographic, political, legal, taxation etc. risks	The risk of adverse change in the social, technological, demographic, political, legal, tax etc. environment.
Catastrophe/extreme event risk	The risk of a catastrophe or other extreme event, including an extreme accumulation of events from the same or related originating cause.

Inadequate or failed processes, systems or people	
Data risk	The risk that insufficient, inadequate or incorrect data is held or collected.
Accounting risk	The risk that inadequate, inappropriate or incorrect financial reporting policies are adopted or applied. This includes both internal and external financial reporting.
Technology risk	The risk of inadequate or inappropriate use (or non-use) of information technology or failure to understand the consequence of advance in information technology, e.g. as a cause of increase claims size or faster claims settlement.

Distribution risk	Inadequate control of distribution, especially where distribution is through agents or other intermediaries or relies upon new technologies (e.g. the internet).
Administration risk	The risk of inadequate or failed administrative systems or staff including inadequate or failed communication between front and back office systems.
Other operational risk	Other risks of inadequate or failed internal processes, people and systems, including in respect of outsourced processes ("outsourcing risk").
Loss of goodwill / reputation risk	The risk of loss of goodwill or reputation.

Inappropriate risk decisions	
Investment / Asset-liability management risk	The risk that an inappropriate investment strategy is adopted or that chosen investment strategy is inadequately implemented, including the risks that: ? assets and liabilities might not be matched due to an inadequate understanding of their liquidity, maturity and interest rate structure; and ? the market, credit and other risks inherent from holding assets are not properly understood.
Reinsurance risk	The risk that an inappropriate reinsurance strategy is adopted or that the chosen strategy is inadequately implemented, including the risks that: ? the characteristics of gross underwriting or of reinsurance products are inadequately understood leading to the selection of inadequate reinsurance protection; and ? the credit-worthiness of reinsurance counterparties is not properly investigated or understood.
Expense Risk	The risk that an inappropriate expense management strategy is adopted or that the chosen strategy is inadequately implemented, including the risk that: ? uncontrolled cost escalation may occur, particularly on large projects, or financial and other (e.g. human) resources are used wastefully. ? techniques to forecast, monitor and control expense levels may be poorly understood.

Underwriting risk	The risk that an inappropriate underwriting strategy is adopted or that the chosen strategy is inadequately implemented. It includes the risks that: ? the circumstances and events which might lead to the incidence or aggregation of loss, or expense, under insurance contracts are not properly investigated or understood; and ? the terms and conditions in insurance contracts are not properly understood.
Business risk	The risk that other aspects of the business strategy are inappropriate or inadequately implemented including the risks of: ? mis-selling ("mis-selling risk"); ? uncontrolled or rapid growth (or lack of planned growth) and its consequences for the adequacy or control of administrative resources, expenses, liquidity, ("growth risk"); ? excessive concentration of business to a particular region or sector or accumulation of exposure to a particular type of risk, ("business concentration risk"); ? non-insurance activities are inappropriate or inadequately controlled, ("contagion risk").

Financial outcomes	
Market risk	The risk of loss from general or specific changes in the value of assets, including from adverse changes in stock exchange indices and in interest and currency exchange rates.
Credit risk	The risk of loss from the failure of a counterparty to meet its obligations as they fall due.
Claims deviation risk	The risk of loss due to adverse deviation in the amount, frequency or timing of claims.
Other liability risk	The risk of unexpected loss or expense from other causes including: ? liability arising from regulatory non-compliance, e.g. mis-selling; and ? loss or expense from non-insurance activities.
Loss of business risk	Loss of goodwill or reputation leads to loss of business and erodes the firm's value.

Incorrect evaluation of financial outcomes	
Technical provisions - evaluation risk	The risk that the technical provisions may prove to be insufficient.
Other liabilities – evaluation risk	The risk of non-recognition, under recognition or delayed recognition, of liabilities.
Asset evaluation risk	The risk that assets are incorrectly valued.

Policyholder harm	
Participating policyholder loss risk	The risk that variable benefits to participating (with-profits) policyholders will fail to meet their reasonable expectations.
Liquidity risk	The risk of delay in meeting policyholder claims due to inadequate liquidity.
(Insolvency) balance sheet) risk	The risk of inability to meet policyholder claims in full due to insolvency, i.e. liabilities exceed assets.

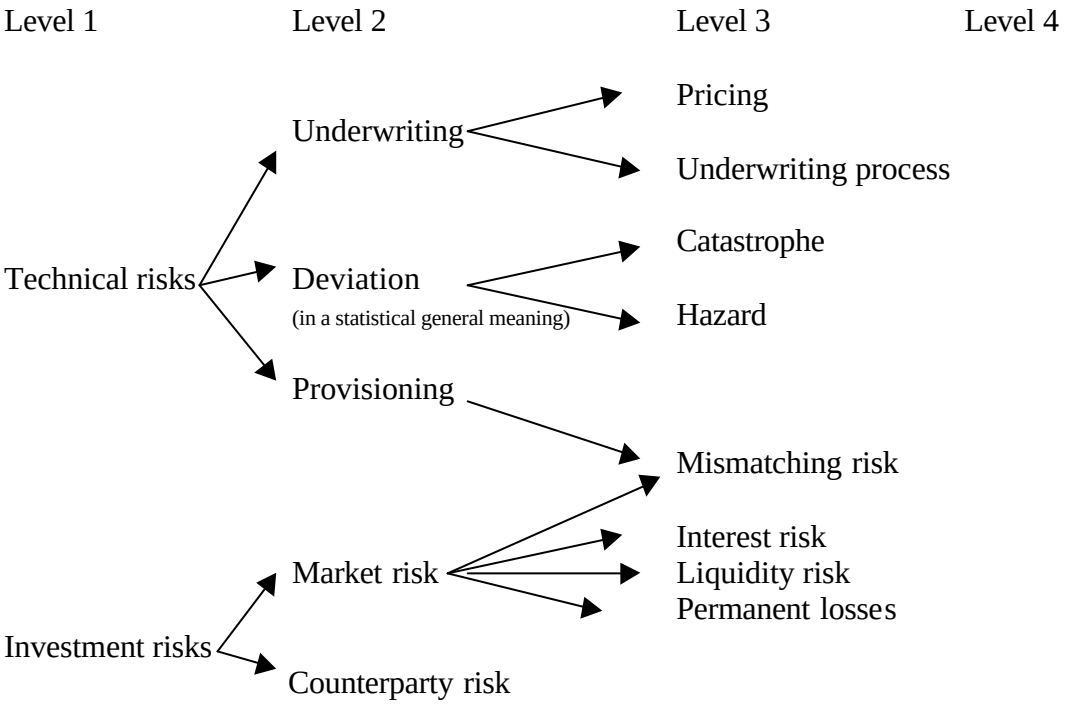
ANNEX B TAXONOMIC RISK CLASSIFICATION

This annex includes two papers on risk classification presented to the Working Group.

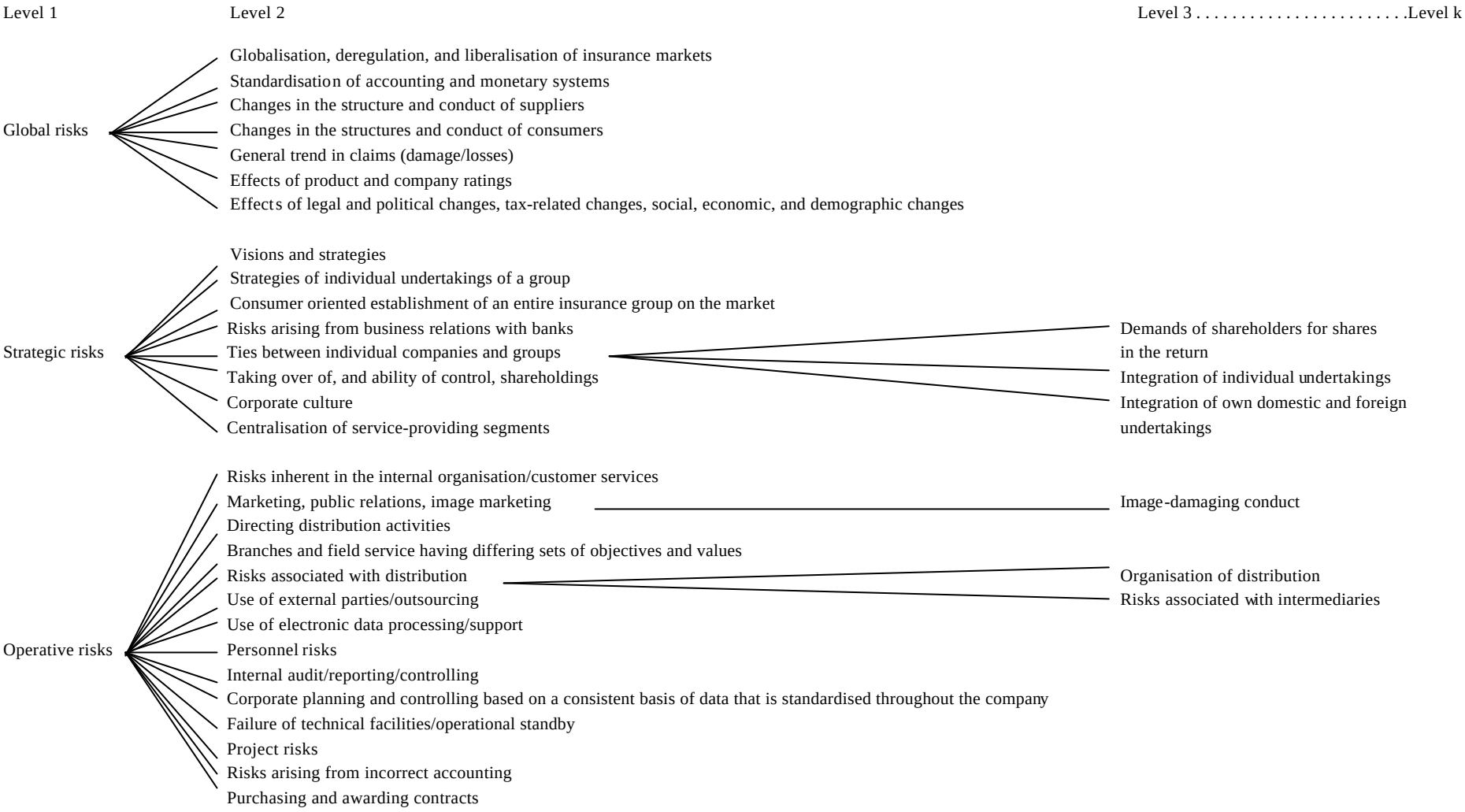
RISK CATEGORISATION – paper 1

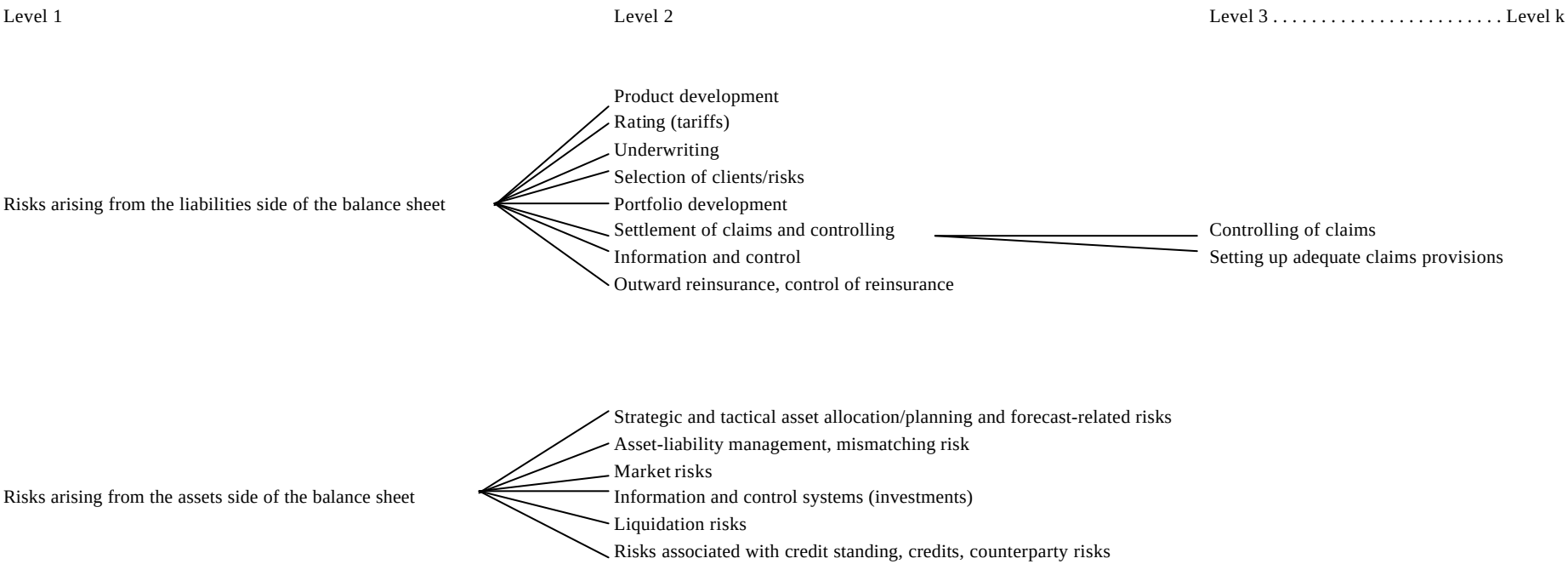
When deciding on a taxonomy, the problem always arises of the level of detail. This was the case when identifying the risks listed in Annex A. Some risks that seem discrete could be combined, and other that appear universal could be broken down into several components.

The solution generally adopted by taxonomists is to use several levels. As an example for insurance risks it could be set up as follows (this is only an example):



RISK CATEGORISATION – paper 2




Level 1
Level 2
Level 3 . . . . . Level k
Risks arising from the liabilities side of the balance sheet
Product development
Rating (tariffs)
Underwriting
Selection of clients/risks
Portfolio development
Settlement of claims and controlling
Information and control
Outward reinsurance, control of reinsurance
Controlling of claims
Setting up adequate claims provisions
Risks arising from the assets side of the balance sheet
Strategic and tactical asset allocation/planning and forecast-related risks
Asset-liability management, mismatching risk
Market risks
Information and control systems (investments)
Liquidation risks
Risks associated with credit standing, credits, counterparty risks

ANNEX C ACTUAL FAILURES QUESTIONNAIRE – SUMMARY

Analysis of the answers to the questionnaire on failing companies

Part I: early intervention measures

1. The first part of the questionnaire sets out to identify the early intervention measures available to States, insofar as such measures are provided for in the Directives, and any lead-time problems regarding the implementation of these measures.

Application of paragraph 4 of amended Article 20 of Directive 73/239 (Article 13 of Directive 92/49) or of paragraph 4 of amended Article 24 of Directive 79/267 (Article 12 of Directive 92/96)

2. The measures adopted pursuant to this paragraph can be measures complementary to the restoration plan (paragraph 2) or to the short-term finance scheme (paragraph 3). They can be used, when the margin requirements are complied with, only in the event of an infringement of the provisions adopted pursuant to Article 15 (level or cover of the technical provisions).

3. Some countries have had a rather narrow interpretation of the Directive by focusing their intervention measures on the requirements stemming from failure to comply with the solvency margin and the guarantee fund (restoration plan and short-term finance scheme). Many countries have at least added to these measures the possibility of freezing the firm's assets. Lastly, others have provided themselves with a highly developed arsenal, yet it is not always possible to know if these measures come under this provision or under that examined under the next heading.

Application of paragraph 3 b of amended Article 19 of Directive 73/239 (Article 11 of Directive 92/49) or of paragraph 3 b of amended Article 23 of Directive 79/267 (Article 10 of Directive 92/96)?

4. This paragraph in fact gives the various States a fair amount of latitude to grant intervention powers to the supervisory authorities. The supervisory authorities must be empowered:

> to take any measures with regard to the undertaking, its directors or managers or the persons who control it, that are appropriate and necessary to ensure that that undertaking's business continues to comply with the laws, regulations and administrative provisions with which the undertaking must comply in each Member State...

5. The various States have made varied use of the possibilities offered by this instrument which allows measures to be taken whenever the company does not comply with the information and management rules (Article 9 of Directive 92/49 amending Article 13 of Directive 73/239) or the rules on assets (Articles 20 to 22 of Directive 92/49).

6. It appears difficult at this stage to analyse these measures precisely because of terminology problems and also owing to the effective use of measures set out in the instruments. By way of example, several States provide for the limiting of business as a possible measure but while this measure is used only exceptionally in one State its use appears to be frequent in another.

Lead-times between knowledge of difficulties and the adoption of measures.

7. Most answers do not mention any specific problems and mostly stress the statutory lead-times between the date when the infringement was recorded and the adoption of a measure.

8. But the question was no doubt poorly expressed because one delegation reported instead the lead-times between first knowledge of possible difficulties and the adoption of penalties. These lead-times in fact result from the addition of several lead-times of further procedures once there are investigations and on-the-spot inspections.

Emergency measures

9. Most States avail themselves of emergency measures.

Compulsory transfers

10. This procedure is provided for in ten States.

Conclusion

11. It clearly appears that compliance with the solvency margin requirements does not play such an exclusive role as is sometimes made out when presenting the European measures. Using the possibilities offered by the Directives a certain number of States have adopted measures allowing them to intervene before the margin requirements cease to be met. In particular the shortage of technical provisions and the failure to cover them with sufficiently safe and liquid assets can lead to action by the supervisory authorities.

Part II - assessment

12. We asked how many firms have undergone the following measures:

    (a) restoration plan (Article 13 of Directive 92/49 or Article 12 of Directive 92/96);

    (b) short-term finance scheme (Article 13 of Directive 92/49 or Article 12 of Directive 92/96) – among these companies, a number have also undergone a restoration plan;

    (c) withdrawal of authorisation (or compulsory transfer of the portfolio) without having previously undergone a restoration plan or a short-term finance scheme; or

    (d) safeguard measures (for instance, freezing of assets) imposed on companies without being followed by one or more of the measures mentioned in (a), (b) and (c).

13. Given the uncertainties regarding the answers to heading (d), these answers have been used only briefly.

Measures taken (see above)	(a) & (b)	(c)	(d)
Number of firms	70	15	30

14. Eighty-five companies can therefore be considered as 'failing companies' (measures (a) to (c)). Out of these, 20 had their authorisation withdrawn and have been wound up. Four others have undergone a compulsory transfer, combined in some countries with a formal withdrawal of authorisation.

15. In this set of 85 failing companies, a solution safeguarding the rights of policyholders was therefore reached in 65 cases. For 25 companies (in addition to the four that underwent a compulsory transfer) this in fact led to their disappearance since the portfolio was taken over by another company either by portfolio transfer or by takeover of the failing company. It should be noted that a certain number of these companies were small or even very small, which generally favoured this type of outcome. It has not been possible to analyse whether these takeovers were more or less spontaneous due to the intrinsic attractiveness of the portfolio, or whether more or less explicit market regulation mechanisms[19] intervened.

[19] This has not always applied but has been observed in some countries at some periods. Bearing in mind that the default of an insurance company generates a poor

16. For 32 companies the situation was rectified by a capital increase. In most cases (19 cases identified) this increase was made by the main shareholder or the group to which the company belonged. This leads to a question on the notion of failing companies. It is known by experience that a company is not really failing until the main shareholder can no longer or does not wish to increase the capital of its subsidiary. Only a few cases mention capital increases with a new partner.

17. In only three cases were companies able to recover alone. Apart from each of these specific cases for which it is difficult to draw conclusions, it clearly appears that a failing company rarely recovers without external help.

Analysis of the causes of defaults

18. Out of the 20 companies that were wound up, there are 17 non-life and 3 life. Only four companies had a turnover of more than €50 million.Technical losses (underpricing and mispricing) are identified as causing eight defaults. In two cases, an assets problem led to defaults. In one case, poor reinsurance cover was the cause. Six cases are presented as multiple cause cases. Underpricing and mispricing appear among the causes of these defaults.

19. The three Life cases are quite different, so it is hard to draw general conclusions.

Conclusion

20. It therefore appears that companies very rarely overcome a difficult situation alone. Solutions that safeguarded policyholders' interests nearly all involved an external partner injecting capital or taking over the portfolio.

21. Among the causes of difficulties, the major risk for a non-life insurance company clearly appears to be underpricing risk and related mispricing. Asset risks are not to be neglected but appear secondary compared with the fundamental risk of underpricing.

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image of insurance, the companies dominating the market 'accept' the alternative of taking over failing companies. This is all the easier when these are small companies.

ANNEX D NEAR MISSES QUESTIONNAIRE – SUMMARY

Objectives and method of the survey

1. The purpose of the questionnaire on 'near misses' was to identify those cases where the current EU solvency requirements were not breached but where the supervisor felt it necessary to intervene or to place the company under some form of special measures. These measures could range from simply keeping the company on a closer watch following a trigger event to more serious forms of intervention such as withdrawing the company's authorisation. The aim was to identify the underlying causes of problems, the symptoms which led to their identification and the measures taken to prevent such cases from becoming actual failures.

2. The term 'near miss' was defined to cover cases where the supervisor took some form of early intervention - whether initiated by the supervisor directly or by the company notifying the supervisors of a specific trigger event. Among the cases identified not only were problems and potential breaches prevented from becoming actual breaches or failures, but also in some cases the supervisor intervened successfully to prevent those problems or potential breaches from arising in the first place. For this reason three distinct categories of early intervention were identified:

   Table 1 - where the insurer still met EU financial solvency requirements and all other legal or regulatory requirements.

   Table 2 - where the insurer still met EU financial solvency requirements but failed to meet other legal or regulatory requirements.

   Table 3 - where the insurer triggered early intervention by entering into a structural change requiring prior approval. These were precautionary interventions rather than interventions in reaction to actual problems.

Responses

3. The questionnaire was circulated to members of the Working Group on 4 September 2001, and the preliminary results were discussed at our meeting on 4 – 5 October 2001. At that stage, responses had been received from 10 countries representing 54 near misses. This is a considerable level of response given the short time available and the other pressures on supervisors' time. Further responses were received subsequently, and the results in this annex are based on all responses.

4. The initial summary prepared in October followed the full list of 36 risks used for the risk mapping exercise at that meeting. In this paper the risk categories have been revised to tie in with the simpler risk chart circulated in advance of our meeting in January 2002 and adopted since then.

5. In this questionnaire countries were asked to identify only significant cases over the past 5 years. The results of a questionnaire such as this are bound to be subjective to a degree and imprecise as they rely on supervisors' memories for most countries in the absence of searchable logs of intervention. We consider that this lack of precision is not important as we believe that the 155 cases covered by the responses achieve our aim of giving a good indication of the range and relative importance of certain issues that are not picked up by the current EU solvency requirements.

6. One particular difficulty identified was interpretation of Table 3 'prior approval for structural change' (see above). This can be interpreted in different ways and some supervisors were unclear whether they should include such cases as 'near misses'. The cases which were submitted did illustrate that the non-financial controls in the current Directives (such as prior approval of change of control) are useful in dealing with certain risks or potential risks. However, given the differing interpretations of this table, the results have not included with the other results of the questionnaire.

Summary of results

	Table 1	Table 2	Table 3	Total
Total cases	77	60	17	155

The responses indicate the following:

? There is a wide range of measures which supervisors use to intervene in a firm that has not breached requirements but might do so in future.

? Supervisors intervene for a variety of reasons, not all of which are financial. For example a number of cases are noted where the intervention relates to management or control issues.

? Supervisors use a number of different means to diagnose or identify problems, although the most common appears to be regular review of financial and statistical information provided by the company supported by more detailed investigations (particularly actuarial reviews).

- It is often difficult to identify the main root cause of the increased risk that leads to early intervention by supervisors, but in the majority of cases it is some form of inappropriate risk decisions by management.

7. These messages are consistent with the detailed case study discussions. The results of tables 1 and 2 are set out in the table in figure 4.1 at paragraph 4.2.2 of this report.

Conclusions

8. By a significant margin the two largest causes of intervention by the supervisor before the solvency margin is breach are incorrect evaluation of financial outcomes (in particular, the technical provisions) and inappropriate risk decisions by management. Inappropriate risk decisions by management can take many forms but business risk, whether due to rapid growth, over concentration of risk or lack of expense control, is a significant part. This result is also consistent with the results in table 3, although they are limited. In these cases, a situation where the firm is likely to change its business strategy sharply (for example, due to change of controllers or a merger) is itself the main reason for supervisor action even though no other problems have appeared at that stage. Supervisors usually respond to Table 3 cases by using a 'prior approval' requirement or increased reporting and monitoring

9. Technical provisions evaluation risk is a significant reason and was also identified in a previous exercise as a key risk. However, it is an effect of other, prior root causes rather than being a root cause itself. The case study exercise allows more time to delve into the underlying causes of each case, and it is for that exercise to determine where technical provisioning risk belongs in the causal chains identified.

10. The main tools supervisors use to identify problems or issues are financial analysis (whether of regulatory returns including an actuarial report or of financial statements) and on-site inspections. This is also consistent with the detailed case studies.

11. Measures taken again varied and appeared to include:

- requiring more financial resources (or structural change, for example a merger where the firm is a mutual and has limited access to more capital resources), even where the firm has not breached its solvency margin;
- seeking to gain more information to clarify the position (e.g. actuarial reports, inspections);

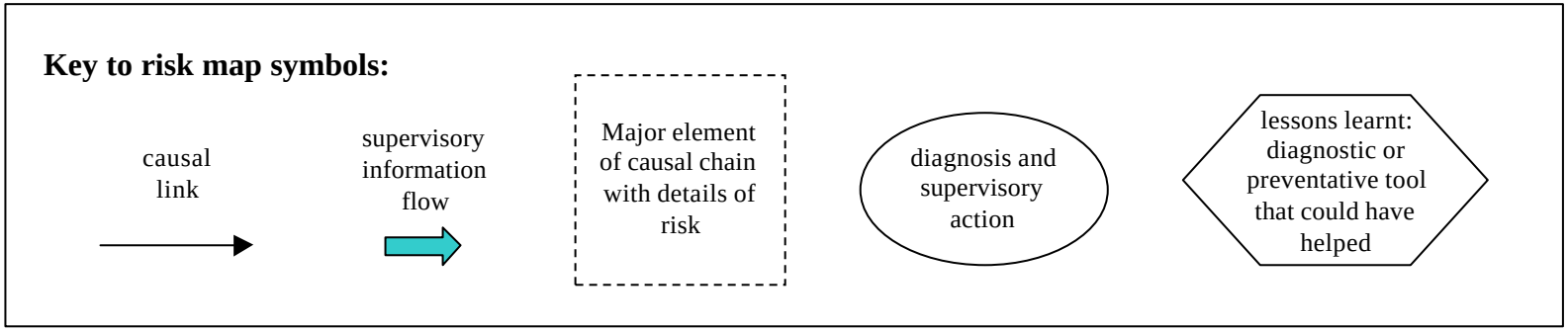
- ? requiring management to submit a plan to resolve the situation (possibly coupled with placing limitations on business activities in the meantime);
- ? requiring additional reinsurance or changes to the firm's reinsurance arrangements;
- ? requiring improvements to be made to systems and controls; and
- ? only in extreme cases seeking to replace or take formal action against management.

12. Again this is consistent with the detailed case studies. There is a notable anomaly, that although inappropriate risk decisions by management appear to be a major cause leading to intervention, only in extreme cases does the supervisor use sanctions against management itself.

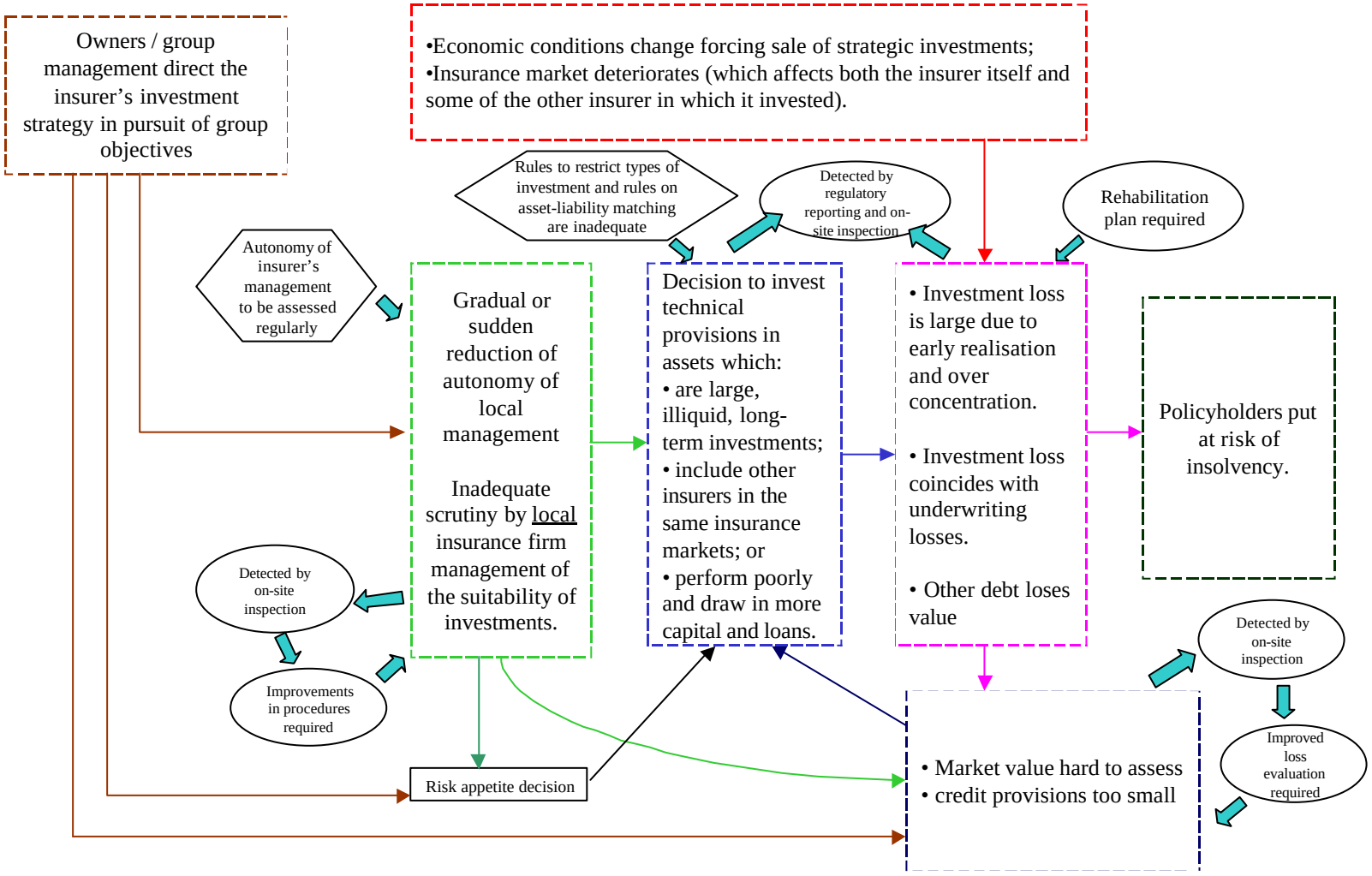
13. Interestingly, the majority of 'near misses' were considered to be of low, or even medium, impact, with only a small amount being considered high. This could suggest that the tools implemented by supervisors were effective to minimise the effect of financial loss and consequent harm to policyholders, although the benign market conditions, particularly in the first half of the period 1996-2000, probably played a significant part.

ANNEX E RISK-MAPS FROM CASE STUDIES

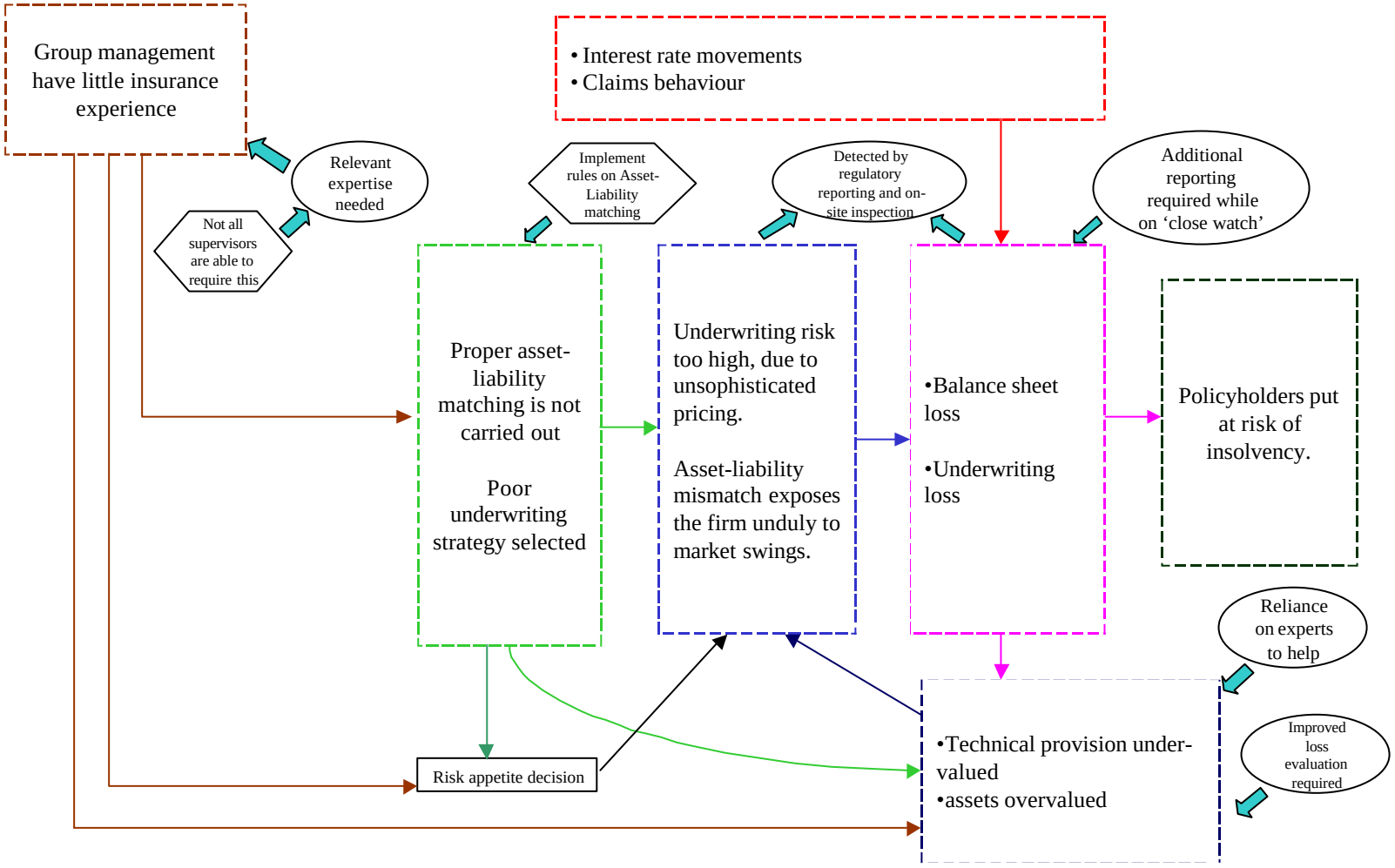
In this Annex we set out the risk maps that illustrate the groups of case studies described in section 4.4 above. The symbols are explained in the following key:



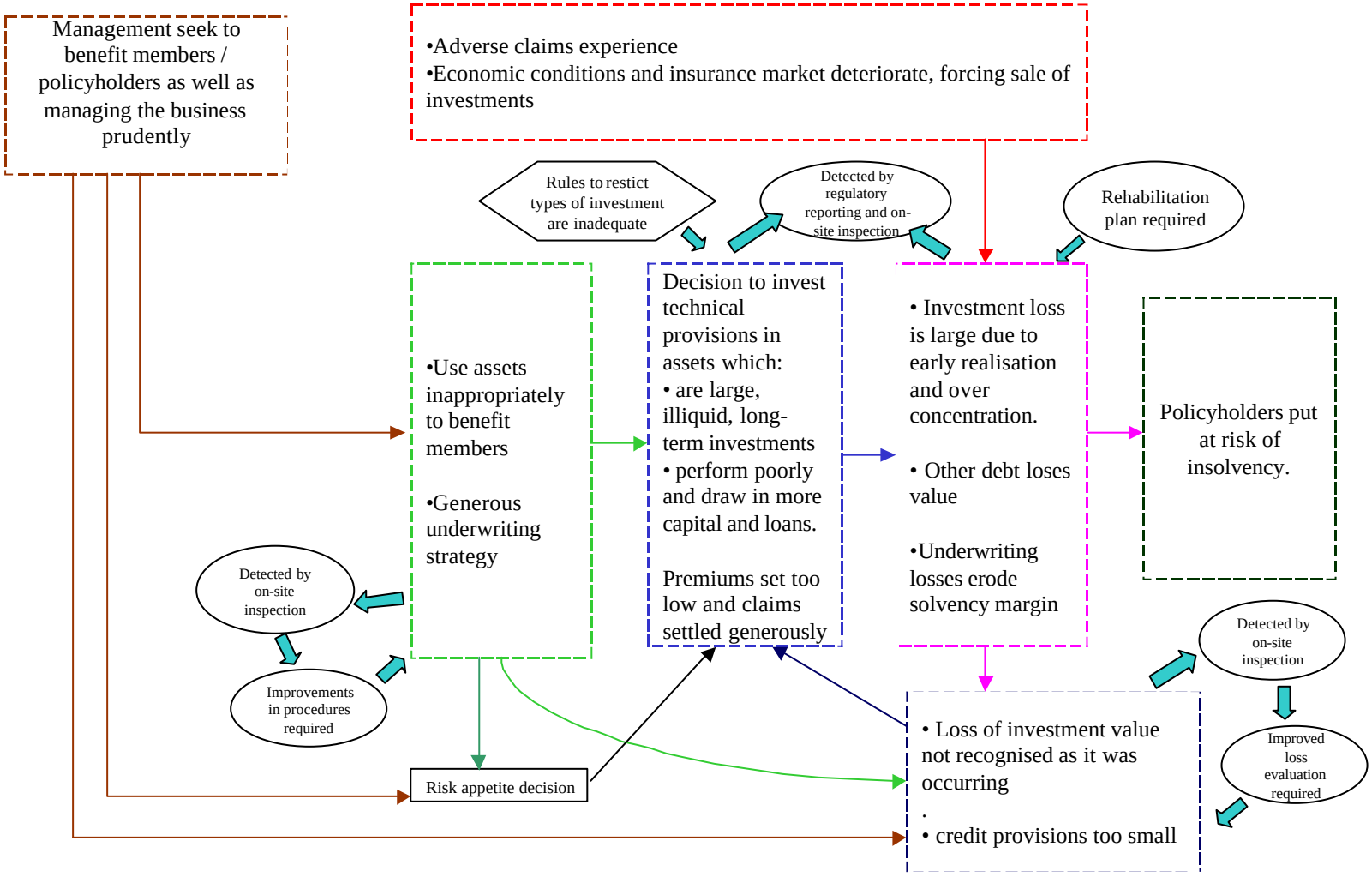
Annex E.1 Parent sets inappropriate policy in pursuit of group objectives (strategic investments)



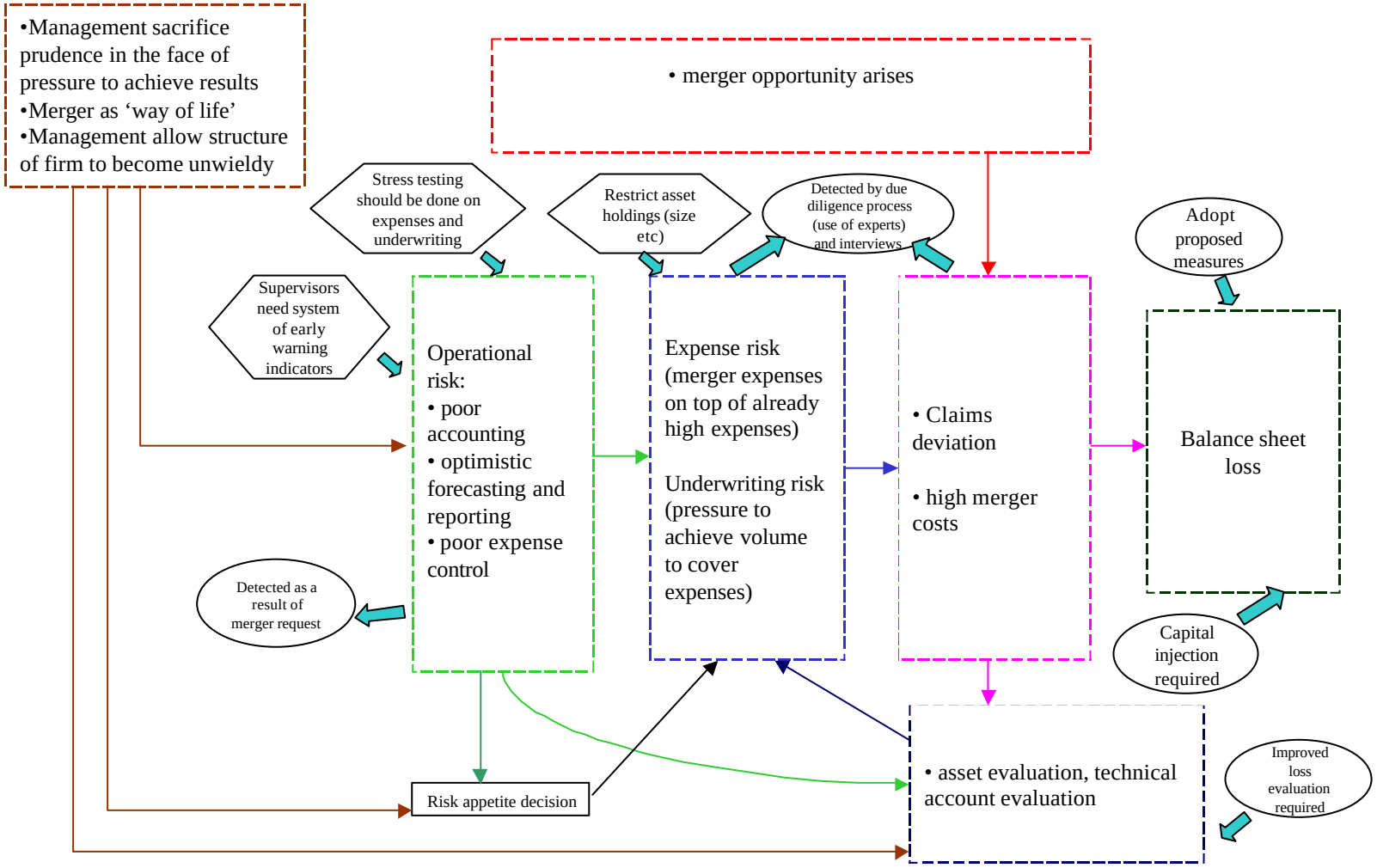
Annex E.2 Parent sets inappropriate policy through poor understanding of insurance



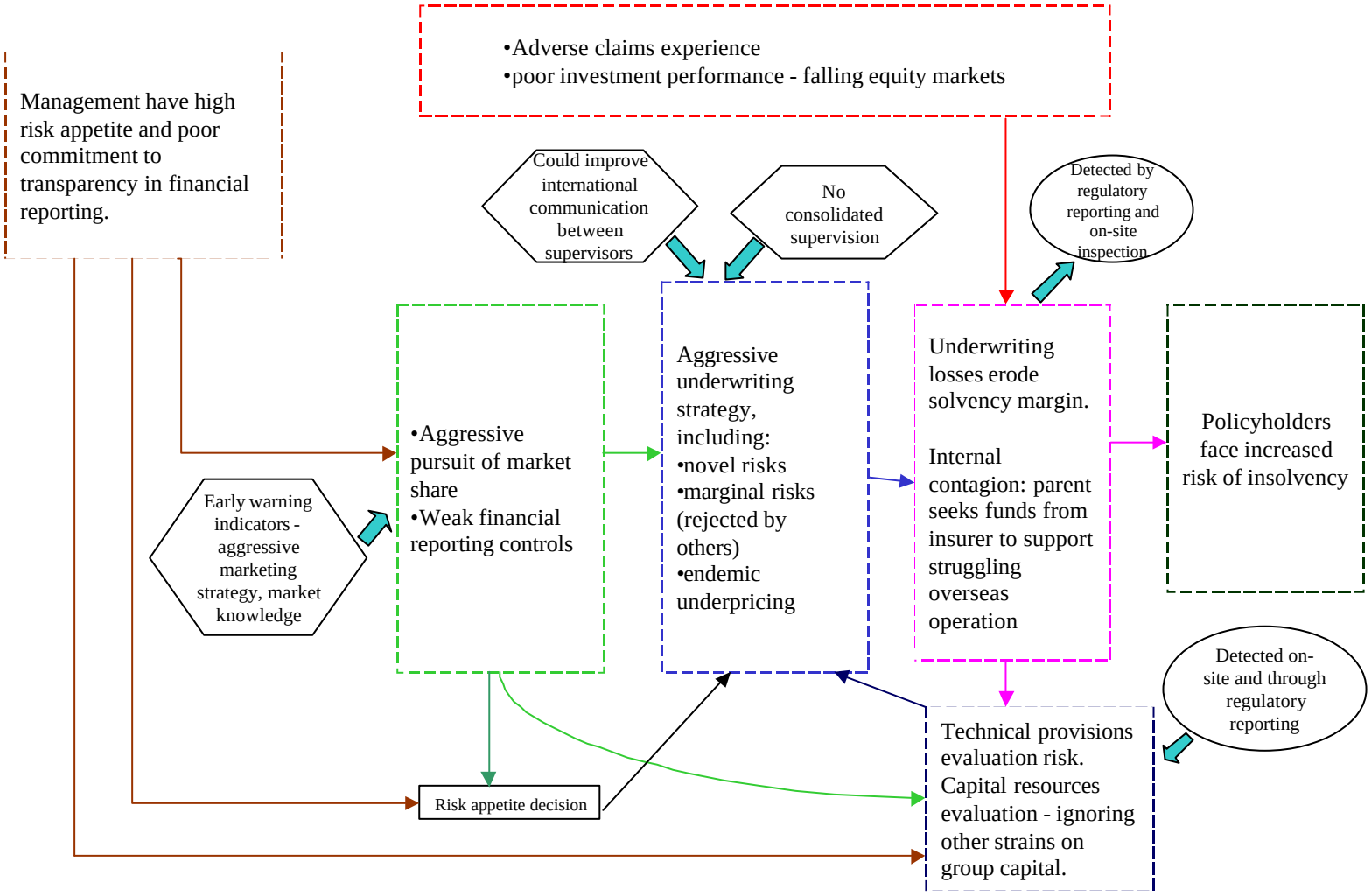
Annex E.3 Mutual insurer faces conflicting objectives



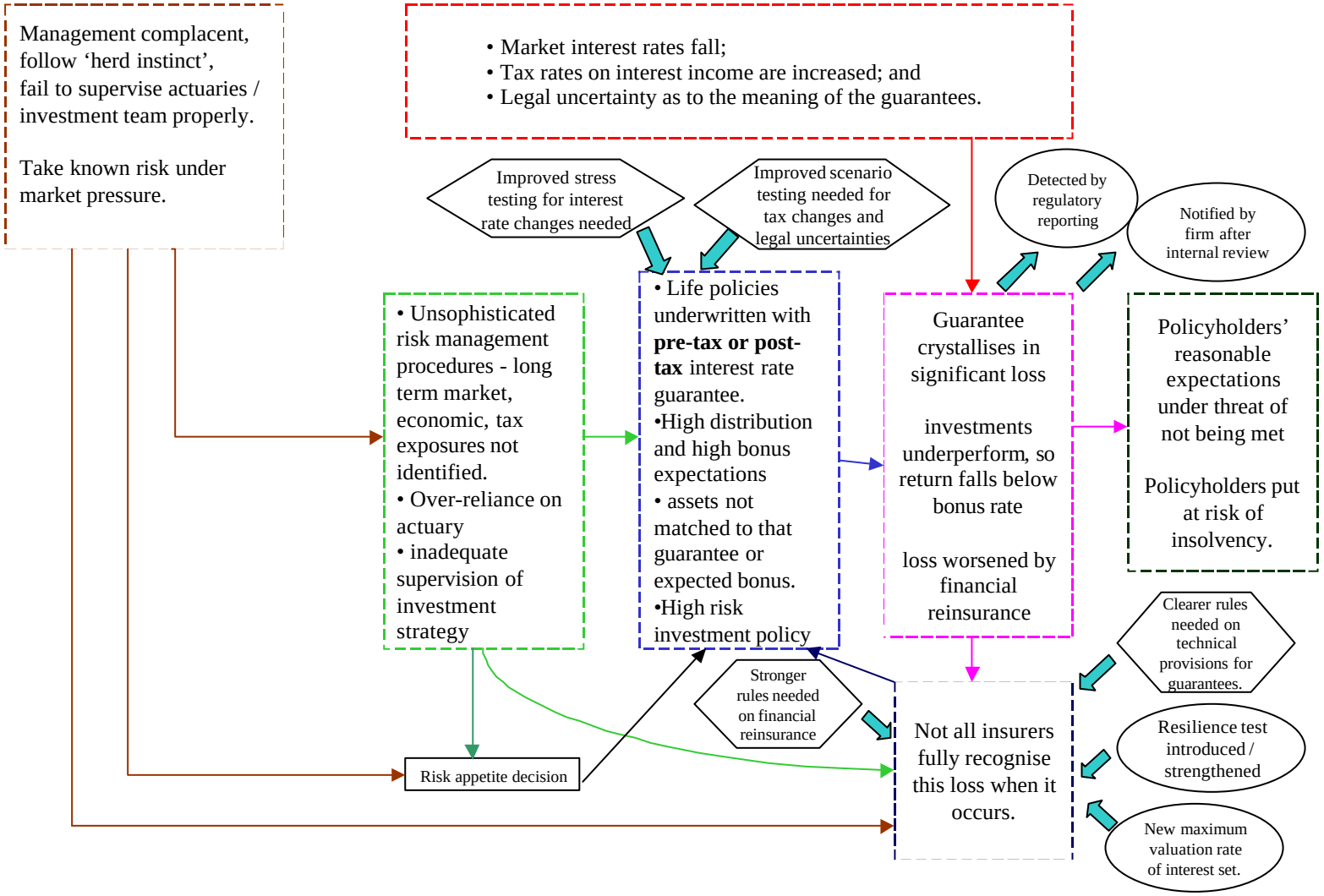
Annex E.4 Business risk: large insurer faces merger integration issues



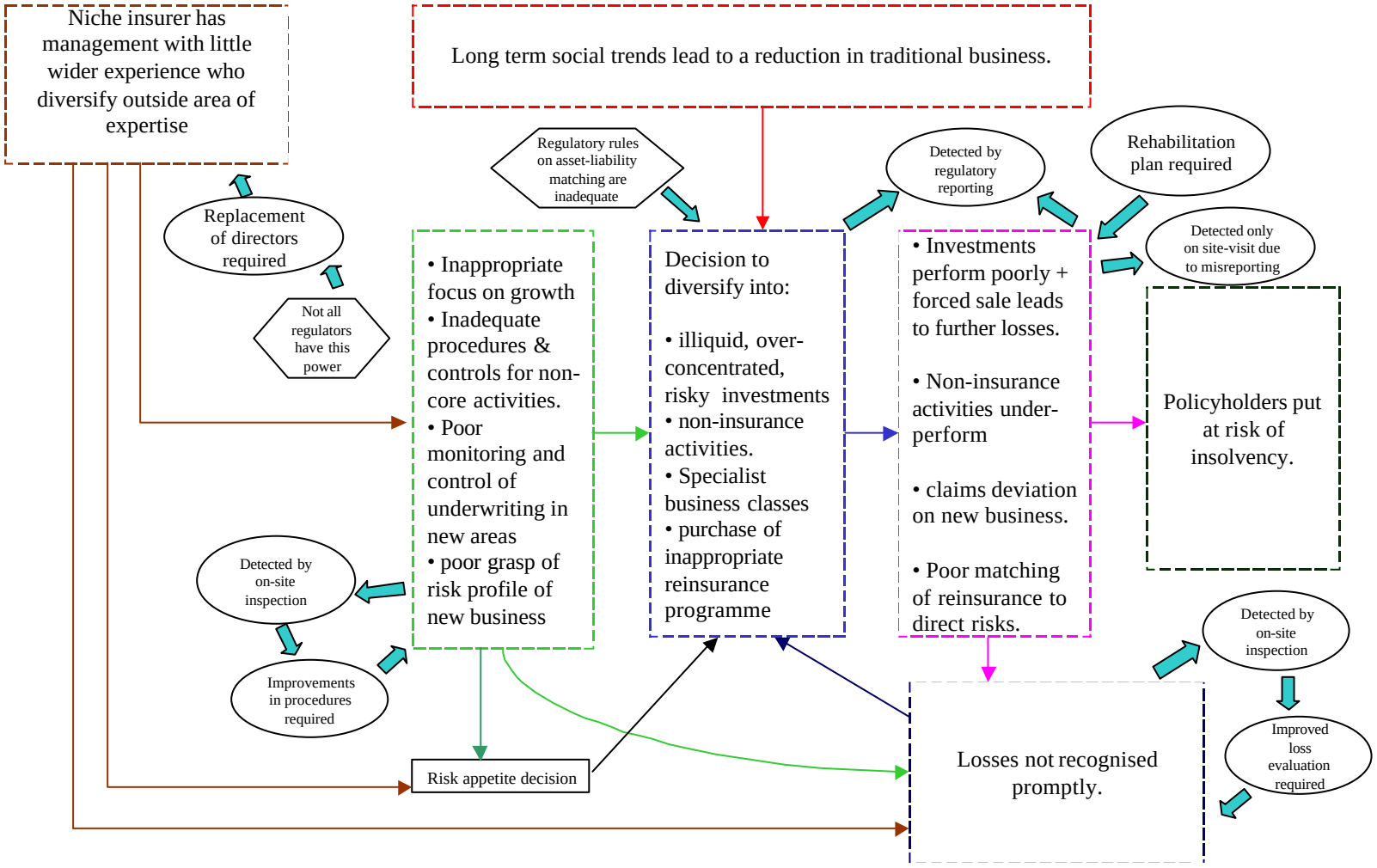
Annex E.5 Cross-border management of insurance group



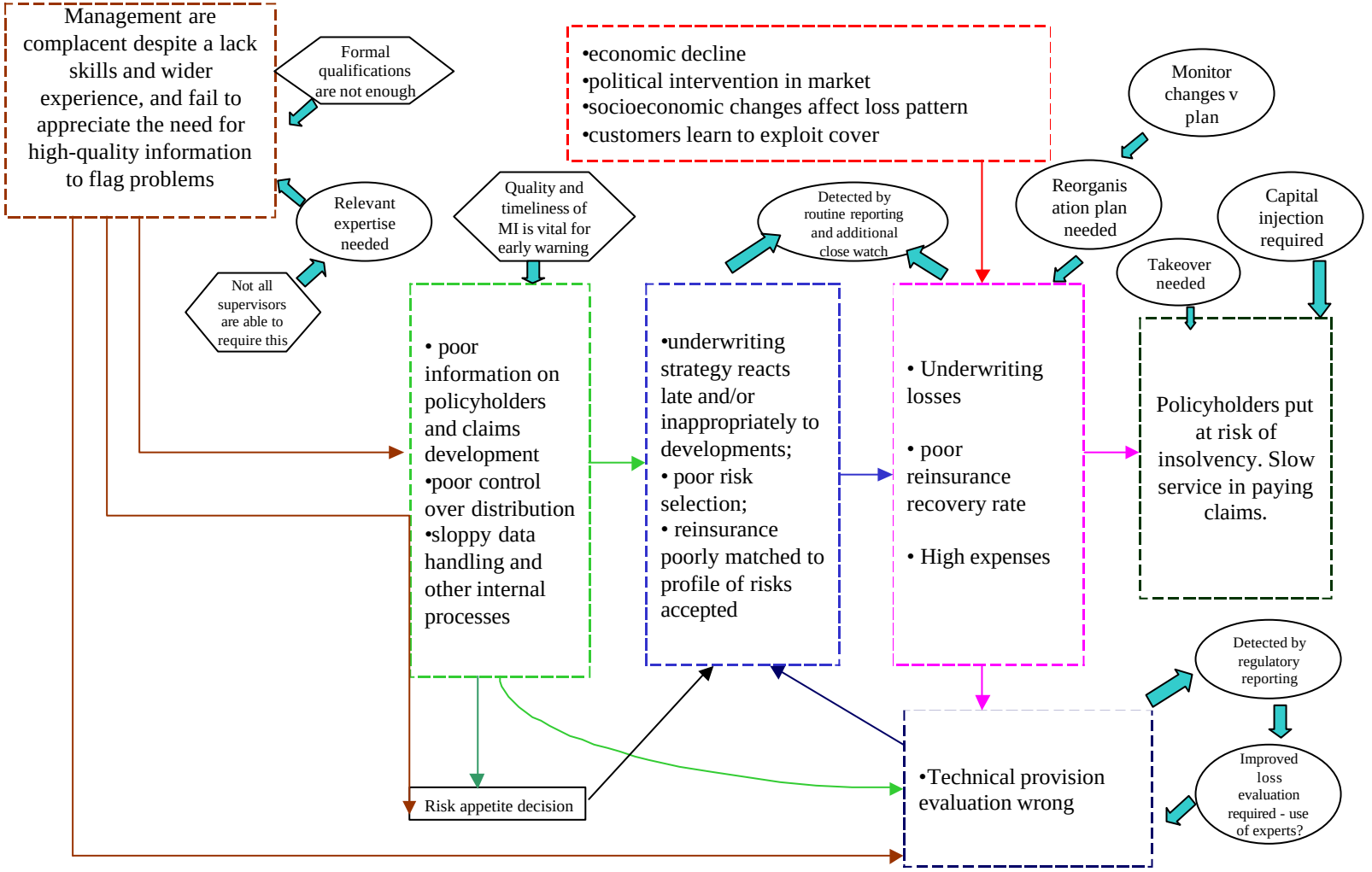
Annex E.6 Life insurer - high expectations / long-term interest rate guarantees



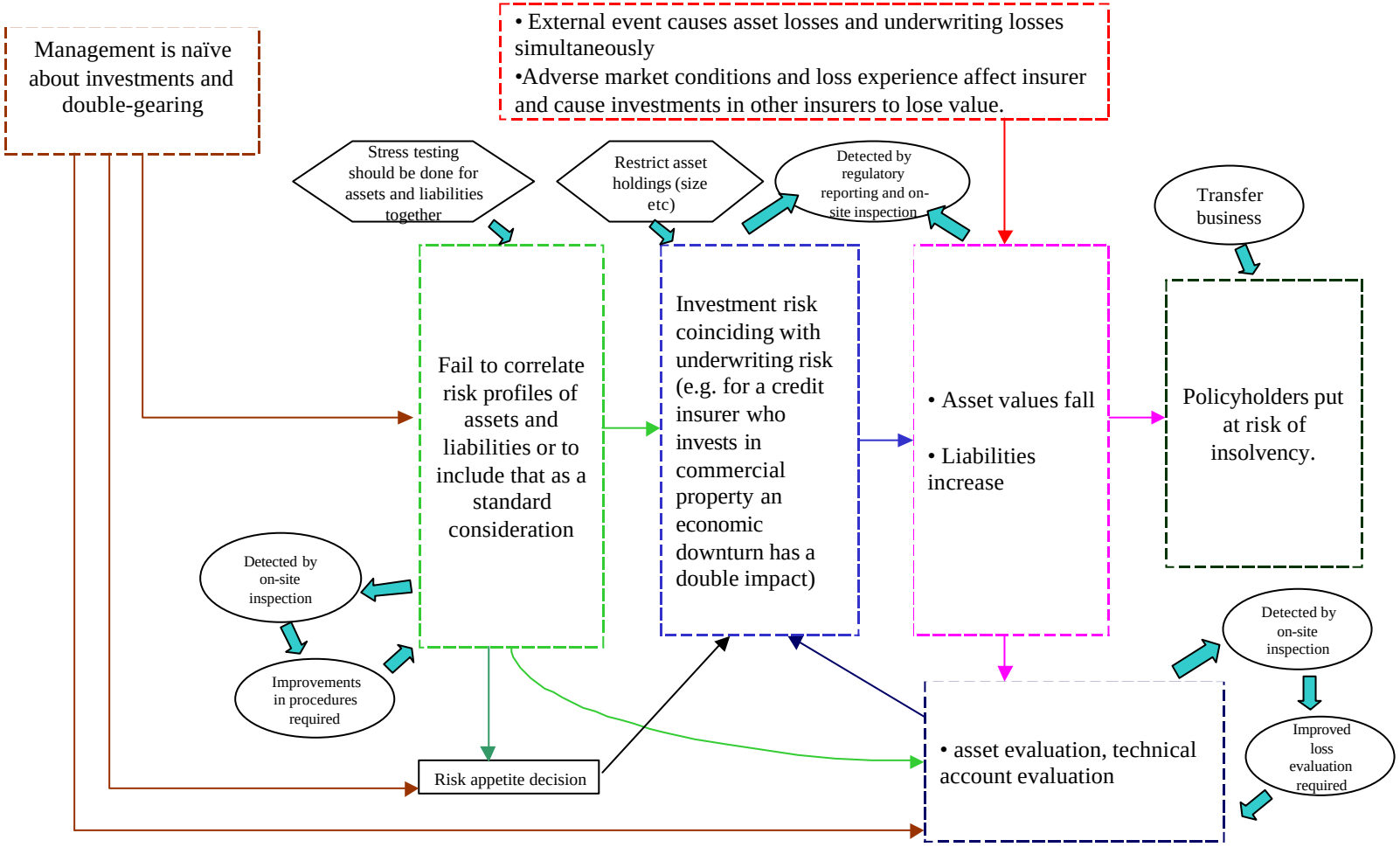
Annex E.7 Stagnating insurer diversifies



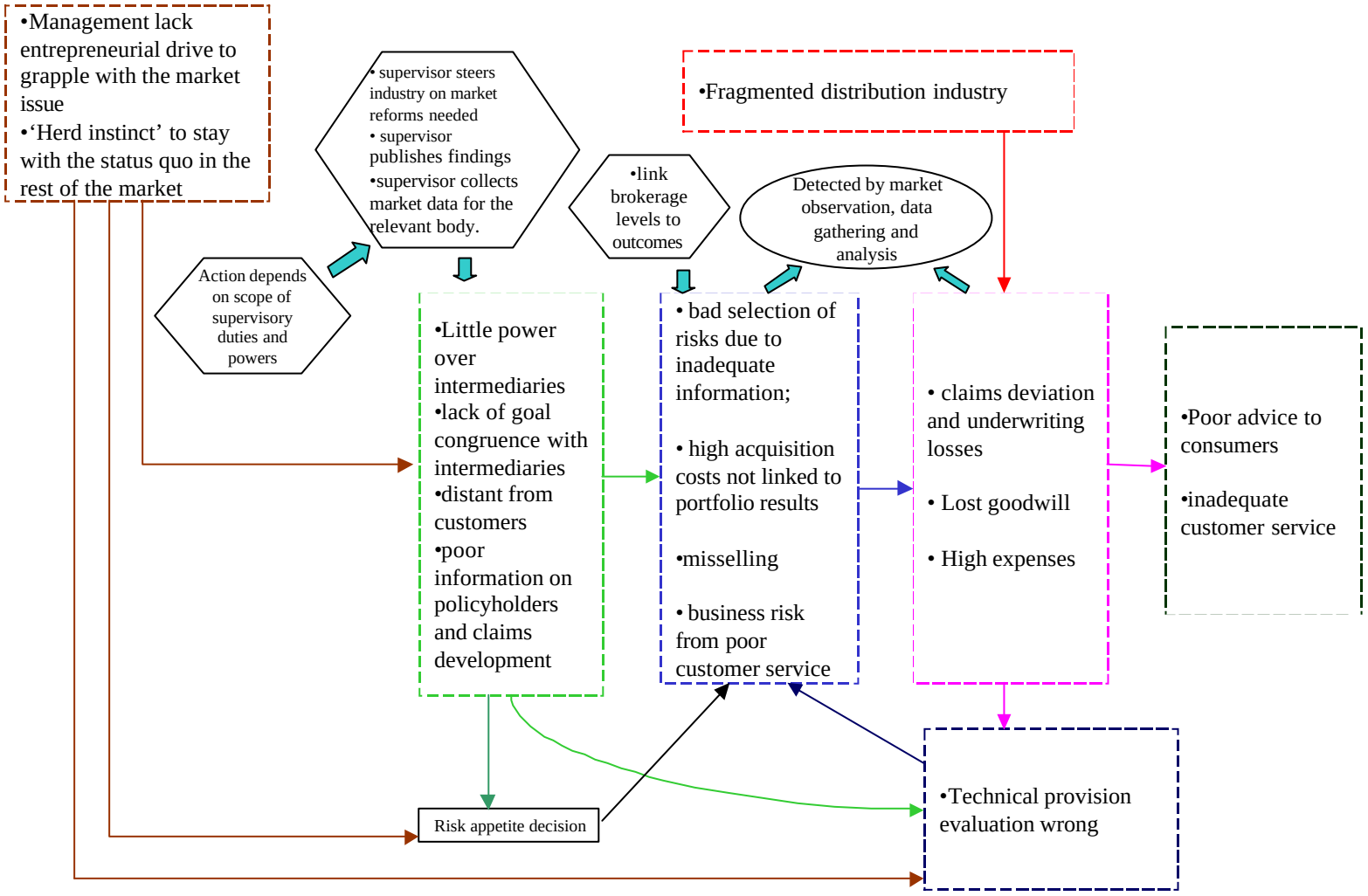
Annex E.8 Underwriting risk: niche player with an evolving market



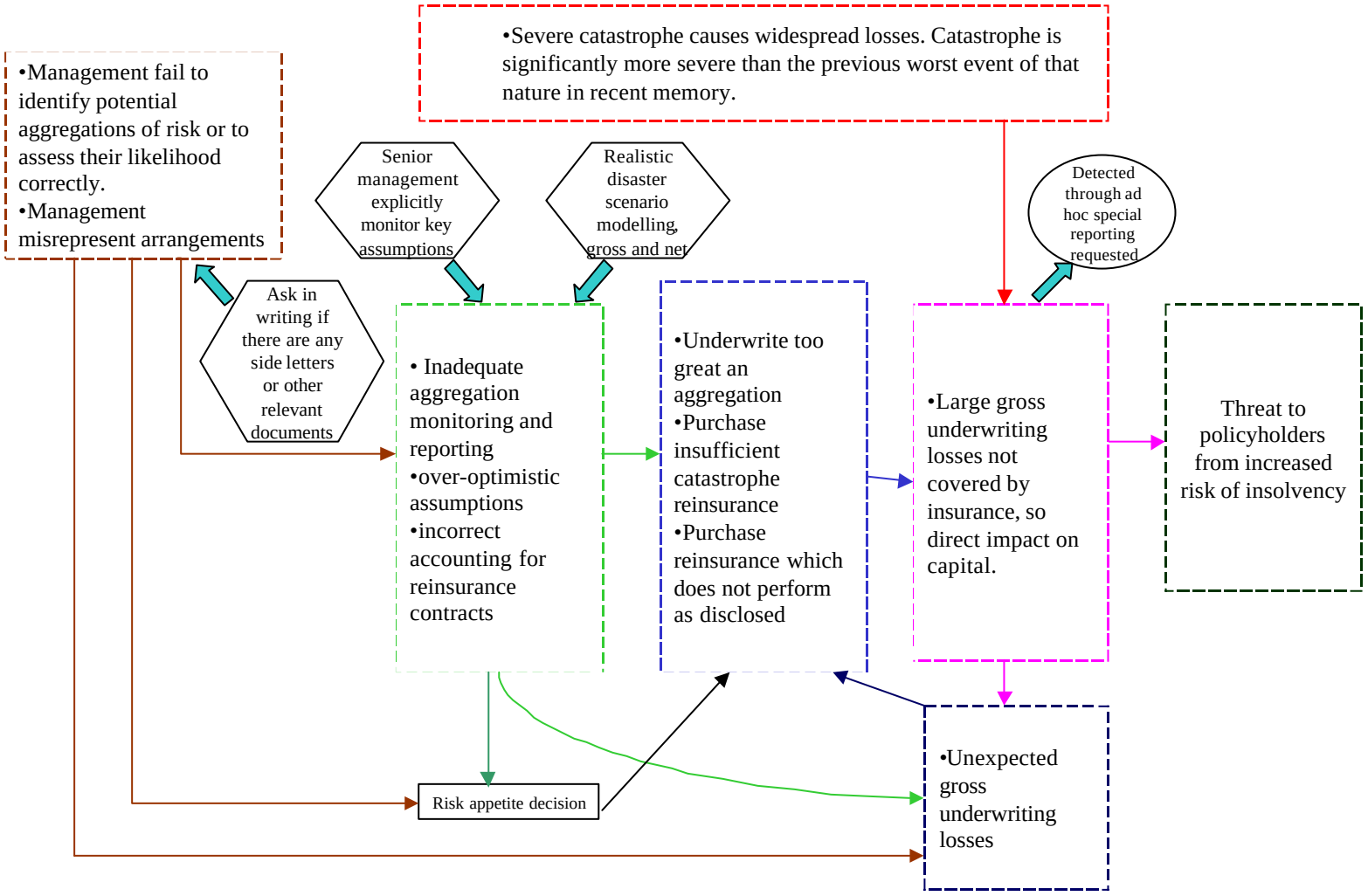
Annex E.9 Insurer matches liabilities with correlated investments



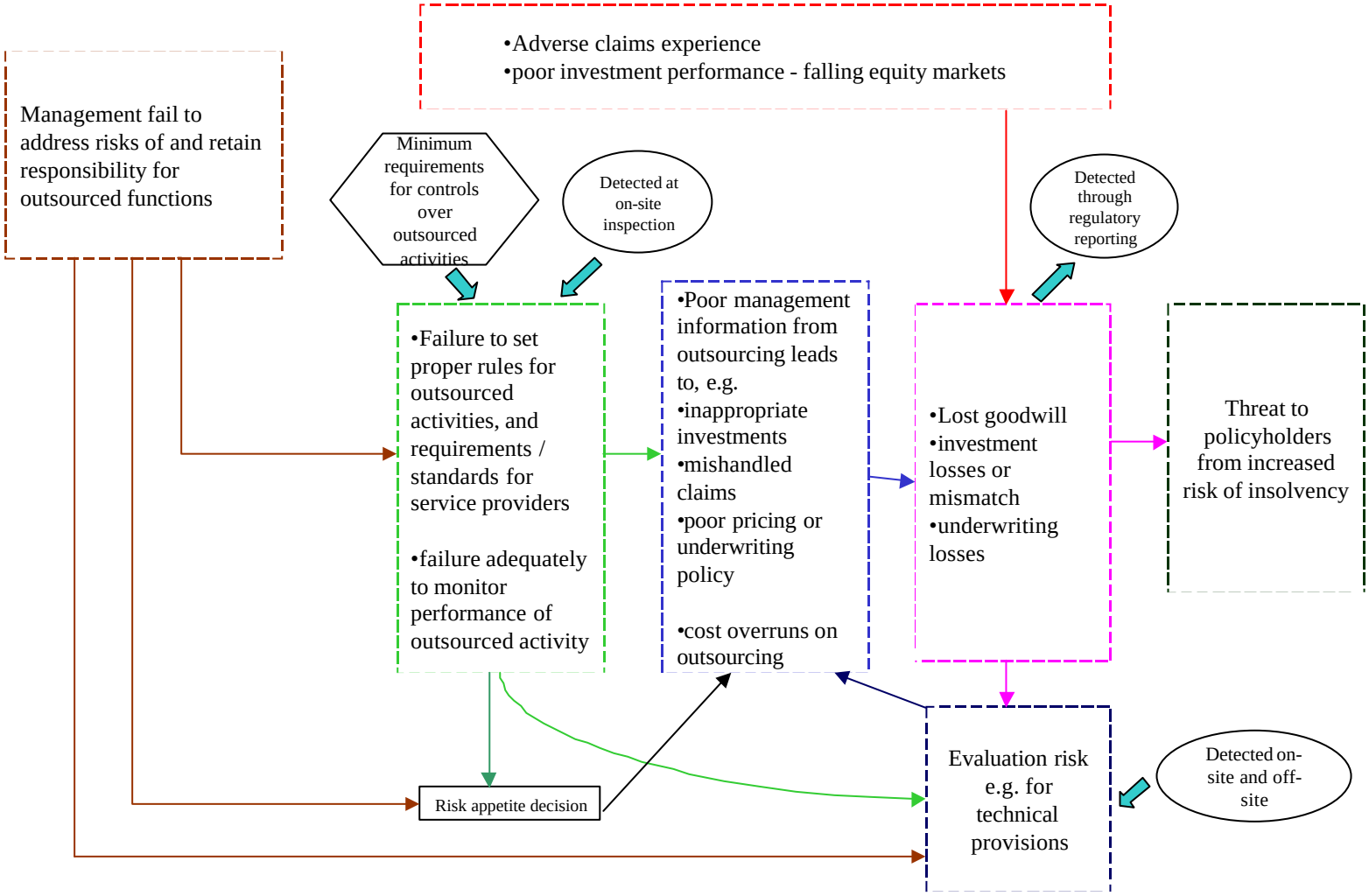
Annex E.10 Firms have inappropriate distribution strategies



Annex E.11 Catastrophe / inadequate reinsurance planning



Annex E.12 Outsourcing of key functions



ANNEX F PREVENTATIVE TOOLS

The tables below list preventative tools which we identified as actually used or potentially useful during discussion of the case studies.

Quantitative preventative tools

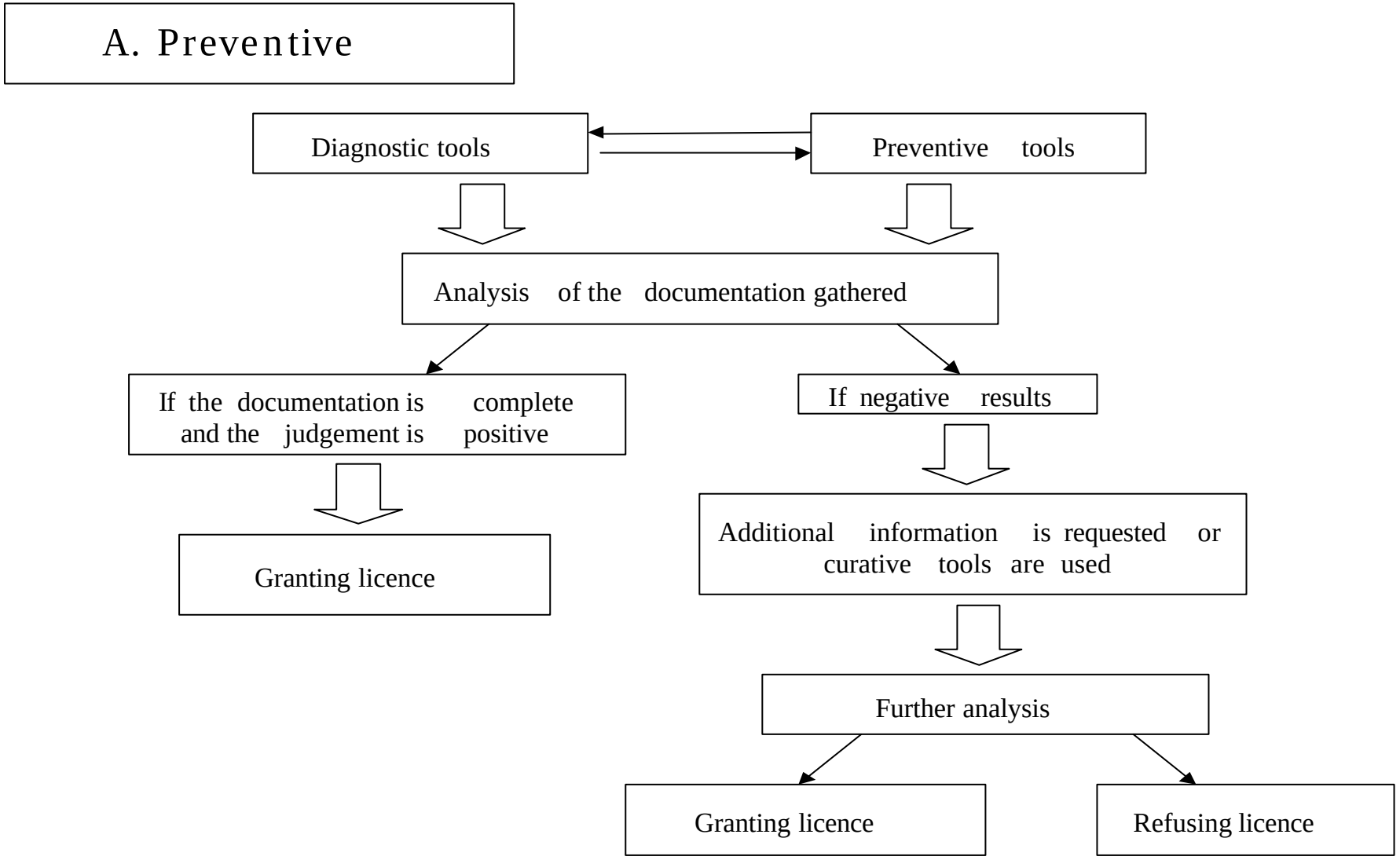
restricted or denied authorisation
capital requirements (to create sufficient buffer)
capital requirements linked to risk management to encourage better practice
asset admissibility limits
strengthened asset matching and admissibility rules, considering some or all of: ? concentration (firm, industry sector, geography, type of instrument) ? liquidity ? correlation of risk profile of assets and liabilities e.g. exposure to economic downturn, interest or exchange rate movements, specific events or developments (e.g. serious latent side-effects of a major drug) ? systemic issues ? related parties ? purpose (e.g. whether strategic or held for resale)
require stress testing of assets and liabilities combining the results under the same scenarios.
require scenario testing of assumptions, including changes to tax regime and legal uncertainties
Strengthen requirements for technical reserving of long-term business, including guarantees, including setting a maximum limit on interest rate and asset return assumptions.

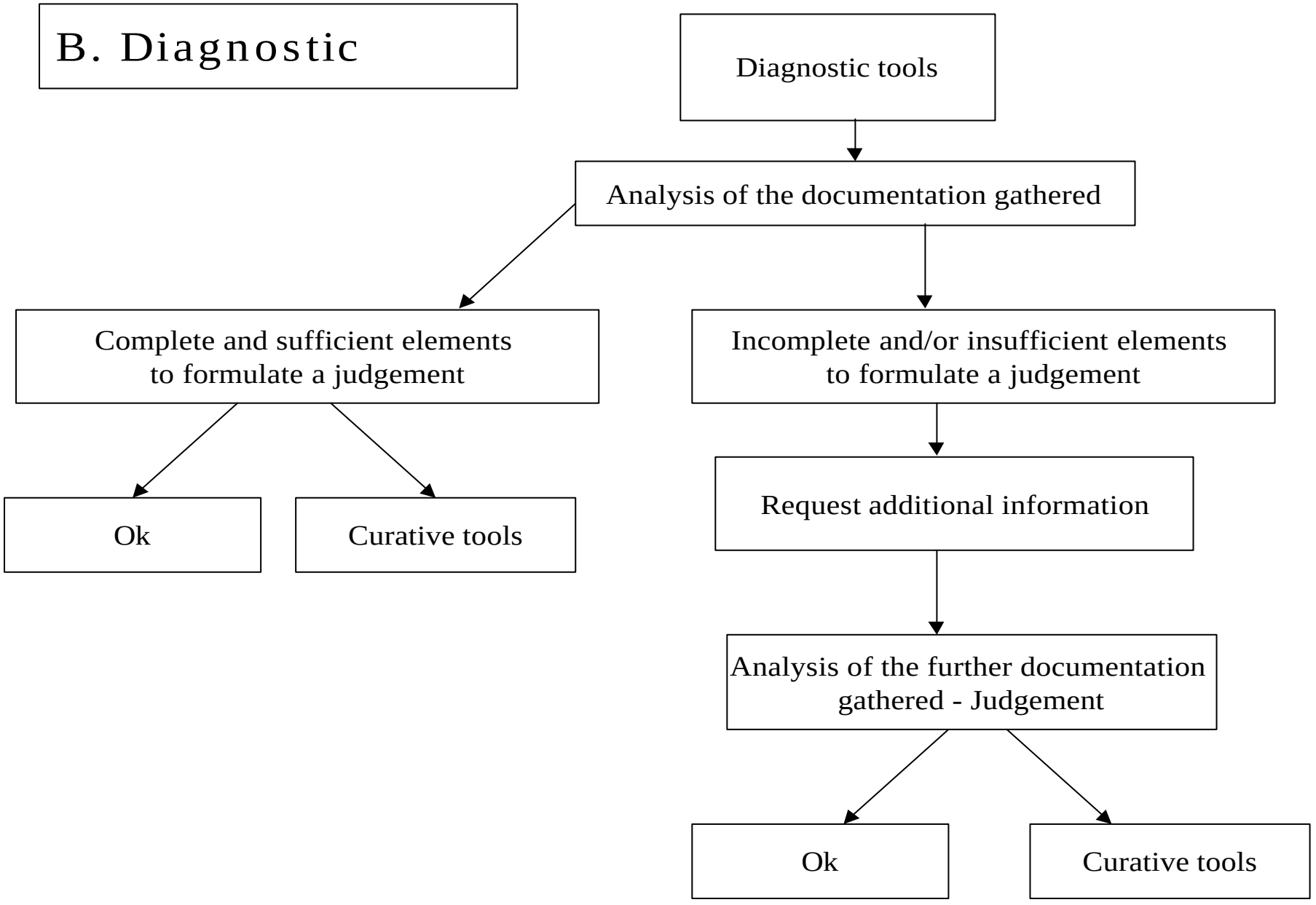
Qualitative preventative tools

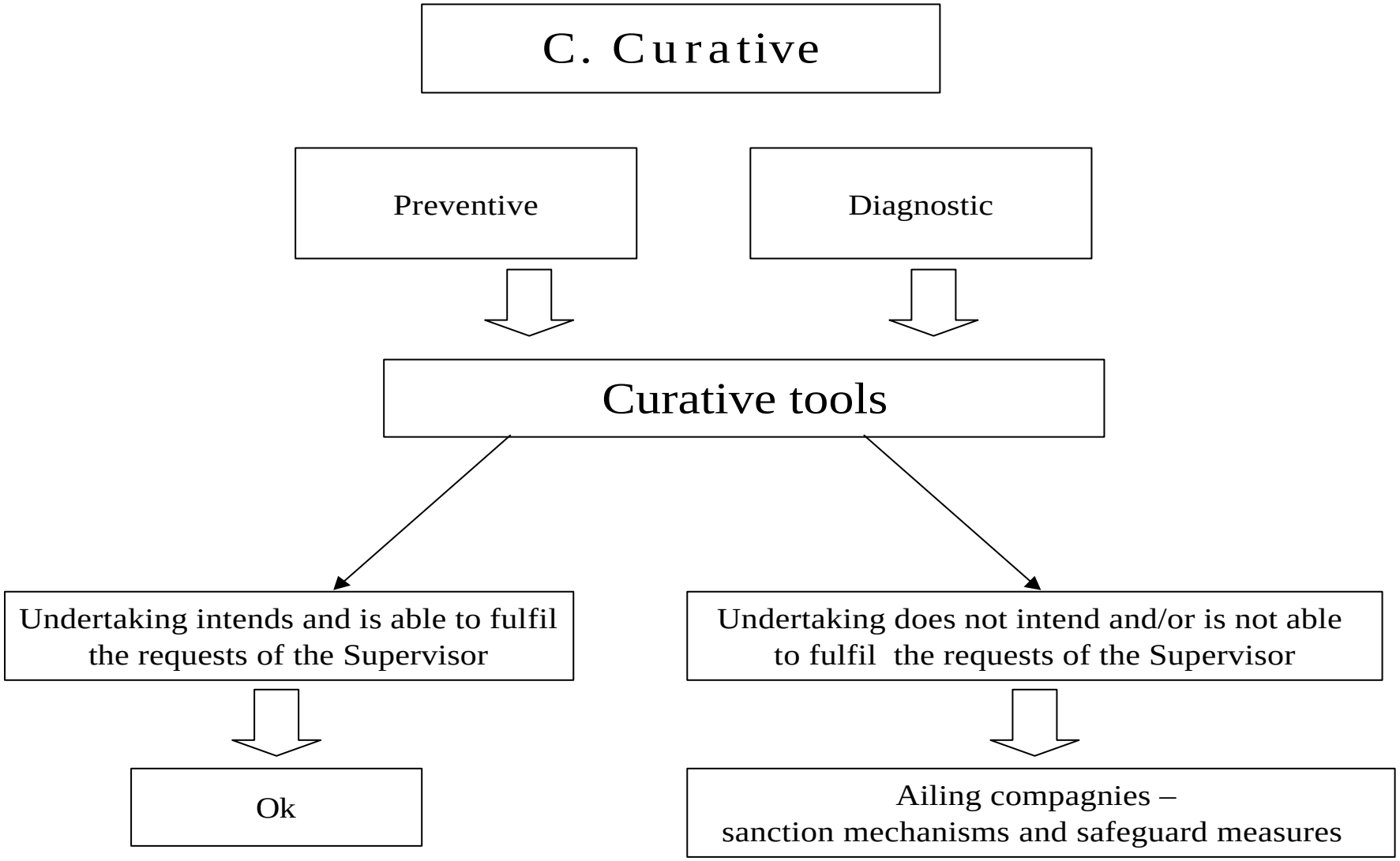
require appropriate management skills and experience (formal qualifications may not be enough) needed for business plan, particularly on change of strategy. Require gaps to be plugged..
make management accountable with clear responsibilities so they have a closer personal interest in prudent management of risk
use of trigger levels could reflect supervisors' judgement of a firm's control culture, as in Banking, operating through 'peer pressure'.
fit and proper regime (covered by a separate working group) – ban or

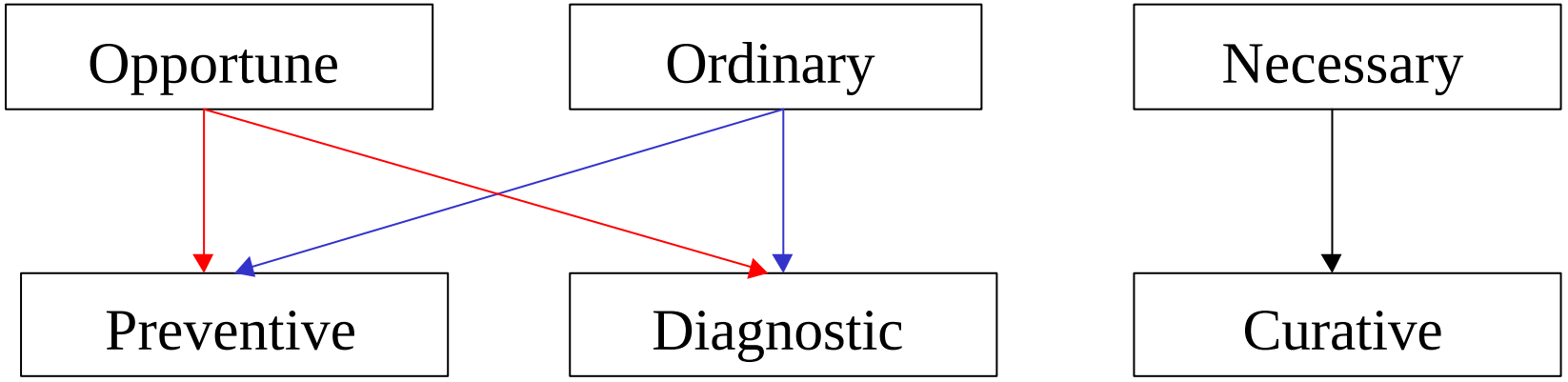
dismiss improper or unfit persons
analysis of ? governance by the board and senior management, ? the decision-making process, ? systems and controls with a particular focus on risk management, ? and internal monitoring and management information. Require weaknesses to be addressed.
Requirement for prior notification of outsourcing arrangements including proposed control mechanisms.

ANNEX G DIAGRAM OF DIAGNOSTIC, PREVENTATIVE AND CURATIVE TOOLS




B. Diagnostic
Diagnostic tools
Analysis of the documentation gathered
Complete and sufficient elements to formulate a judgement
Incomplete and/or insufficient elements to formulate a judgement
Ok
Curative tools
Request additional information
Analysis of the further documentation gathered - Judgement
Ok
Curative tools


C. Curative
Preventive
Diagnostic
Curative tools
Undertaking intends and is able to fulfil the requests of the Supervisor
Undertaking does not intend and/or is not able to fulfil the requests of the Supervisor
Ok
Ailing compagnies – sanction mechanisms and safeguard measures

D. On site inspections

Inspections are conducted on the basis of a programme including ordinary inspections in supervised undertakings and other checks deemed opportune or necessary in the light of some areas of specific concern emerging from the analysis of the documents and information available.