

ASSESSING THE IMPACT OF REGULATORY CHANGES ON THE ROLE OF RISK MANAGEMENT IN INSURANCE COMPANIES

by

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ABSTRACT

In 2008, the world experienced a global financial crisis, highlighting concerns over a tight-touch financial regulatory system such as currently used in South Africa. Even though the South African financial system weathered the storm, nearly a million jobs were lost as a result of the global contagion that originated from the crisis in the First World's banking and financial systems. Consequently, the Financial Services Board, the South African regulator responsible for the non-banking financial services industry, started reforming its regulatory system in the aftermath.

The Solvency Assessment and Management framework is currently being developed to establish a risk-based regime for the prudential regulation of long-term insurers and short-term insurers in South Africa. Solvency Assessment and Management is developed as a risk-based supervision framework replicating the multi-year European project called Solvency II. The Financial Services Board established a Solvency Assessment and Management governance structure to provide it with recommendations from all stakeholders for the risk-based framework underlying the Solvency Assessment and Management regulatory regime. The Solvency Assessment and Management governance structure consists of three main committees overseeing quantitative aspects (Pillar I), risk management and governance (Pillar II) and reporting and disclosure (Pillar III).

The study focused on the Pillar II impact of Solvency Assessment and Management on the role of risk management in an insurance company. Furthermore, the study evaluated the current self-assessed readiness of insurers for the future Solvency Assessment and Management risk management requirements. A quantitative data analysis approach was applied to the Solvency Assessment and Management Pillar II Readiness Survey, which the Financial Services Board conducted in 2012 as part of the journey to prepare insurers for Solvency Assessment and Management. The survey was mandatory for all registered South African insurance companies with the primary focus of gaining a better understanding of how insurers prepared themselves for the requirements of Pillar II.

The questionnaire consisted of seven parts and in each part, there were specific questions related to the Pillar II requirements followed by a self-assessed readiness question. The

purpose of the data analysis was to identify which aspects of the risk management section of the questionnaire were significant predictors of whether insurers rated themselves as ready for the Solvency Assessment and Management Pillar II risk management requirements. The relationship between the responses to each question and the insurers' self-assessed readiness for the Solvency Assessment and Management risk management requirements was tested using Pearson's chi-squared test and Fisher's exact test.

Key predictors of readiness identified in the analysis were compared with literature on the attributes required for a robust risk management system. The study provided insight into insurers' perception of a relevant risk management framework compliant with the Solvency Assessment and Management requirements.

Results from the analysis of individual relationships for life insurers indicated that there was a significant relationship between having in place a risk management system documenting the risk management strategy, an explicit asset-liability management policy, an investment policy and a risk transfer policy and assessing themselves as ready for the Solvency Assessment and Management requirements. Therefore, life insurers who had these components of the risk management framework in place were more likely to assess themselves as ready for the future Solvency Assessment and Management Pillar II risk management requirements.

For non-life insurers, the results indicated that there was a significant relationship between having in place a risk management system documenting the risk management strategy, an explicit asset-liability management policy, a risk transfer policy and a remuneration committee and assessing themselves as ready for the Solvency Assessment and Management requirements. Therefore, non-life insurers who had these components of the risk management framework in place were more likely to assess themselves as ready for the future Solvency Assessment and Management Pillar II risk management requirements.

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LIST OF ABBREVIATIONS

The following abbreviations are used throughout this document:

Abbreviation	Meaning
AIG	American Insurance Group
ALM	asset-liability management
ERM	enterprise-wide risk management
FSAP	Financial Sector Assessment Program
FSB	Financial Services Board
G20	Group of Twenty (an international forum of finance ministers and central bank governors from the world's largest economies and the European Union)
G8	Group of Eight (a forum of the governments of eight of the world's 11 largest national economies)
G-SIFI	global systemically important financial institutions
IAIS	International Association of Insurance Supervisors
IMF	International Monetary Fund
NAIC	National Association of Insurance Commissioners
OECD	Organisation for Economic Cooperation and Development
ORSA	Own Risk and Solvency Assessment
OSFI	Office of the Superintendent of Insurance
RBC	risk-based capital
SAM	Solvency Assessment and Management
US	United States
VaR	value at risk

CHAPTER 1: INTRODUCTION

1.1 BACKGROUND

In 2008, the world experienced a global financial crisis, highlighting concerns over a tight-touch financial regulatory system such as currently in use in South Africa (National Treasury, 2013). Even though the South African financial system weathered the storm, nearly a million jobs were lost as a result of the global contagion that originated from the crisis in the First World's banking and financial systems (National Treasury, 2013). Levine (2012) agrees with this contagion risk and points out that the partial failure of financial regulation contributed to the collapse of the global financial system. The Financial Services Board is updating regulation through the Solvency Assessment and Management project whereby insurers will be required to change and adapt existing management and oversight structures (Financial Services Board, 2012).

The Solvency Assessment and Management framework's purpose is to establish a risk-based regime for the prudential regulation of long-term insurers and short-term insurers and insurance groups in South Africa. *Long-term insurers* or life insurers are regulated by the Long-Term Insurance Act (52/1998) and defined as a person registered or deemed to be registered as a long-term insurer who conducts business of providing or undertaking to provide policy benefits under long-term policies. *Short-term insurers* or non-life insurers are regulated by the Short-Term Insurance Act (53/1998) and defined as a person registered or deemed to be registered as a short-term insurer who conducts business of providing or undertaking to provide policy benefits under short-term policies. Policies issued by long-term insurers underwrite life perils whereas short-term insurers underwrite non-life perils.

Since the Financial Services Board and the industry embarked on the project in 2009, there has been significant progress in the development and implementation of the framework (Financial Services Board, 2012, 2013a). The Solvency Assessment and Management (SAM) framework has already put in place interim measures for the calculation of reserves and capital requirement for short-term insurers, as provided for in

Board Notice 169 (Financial Services Board, 2011). Further development of the SAM governance framework was put in place through Board Notice 158 (Financial Services Board, 2014), which took effect from 1 April 2015. Apart from introducing formal insurance group legislation, Board Notice 158 (Financial Services Board, 2014) introduces enhanced governance and risk management requirements underlying the future SAM regime (Financial Services Board, 2012, 2013a, 2013c).

Solvency Assessment and Management is developed as a risk-based supervision framework replicating the multi-year European project called Solvency II. Locally, the Financial Services Board is working towards third country equivalence in terms of Solvency II so that Solvency Assessment and Management would be regarded as equivalent to Solvency II regulation used in Europe. This third country equivalence will position South Africa as the financial portal into Africa (Financial Services Board, 2012).

The exact implementation date of Solvency Assessment and Management depends on a variety of factors such as the following (Financial Services Board, 2012):

- completion of a consultative development process with industry;
- time required to draft and process primary and secondary legislation; and
- completion of a parliamentary process before the revised legislation can be enacted.

While it is not possible to ascertain the exact duration of all these interlinking processes upfront, current Financial Services Board planning places full implementation of Solvency Assessment and Management on 1 January 2016 with a parallel run of existing and future Solvency Assessment and Management legislation during the latter part of the 2014 and 2015 calendar years (Financial Services Board 2013d).

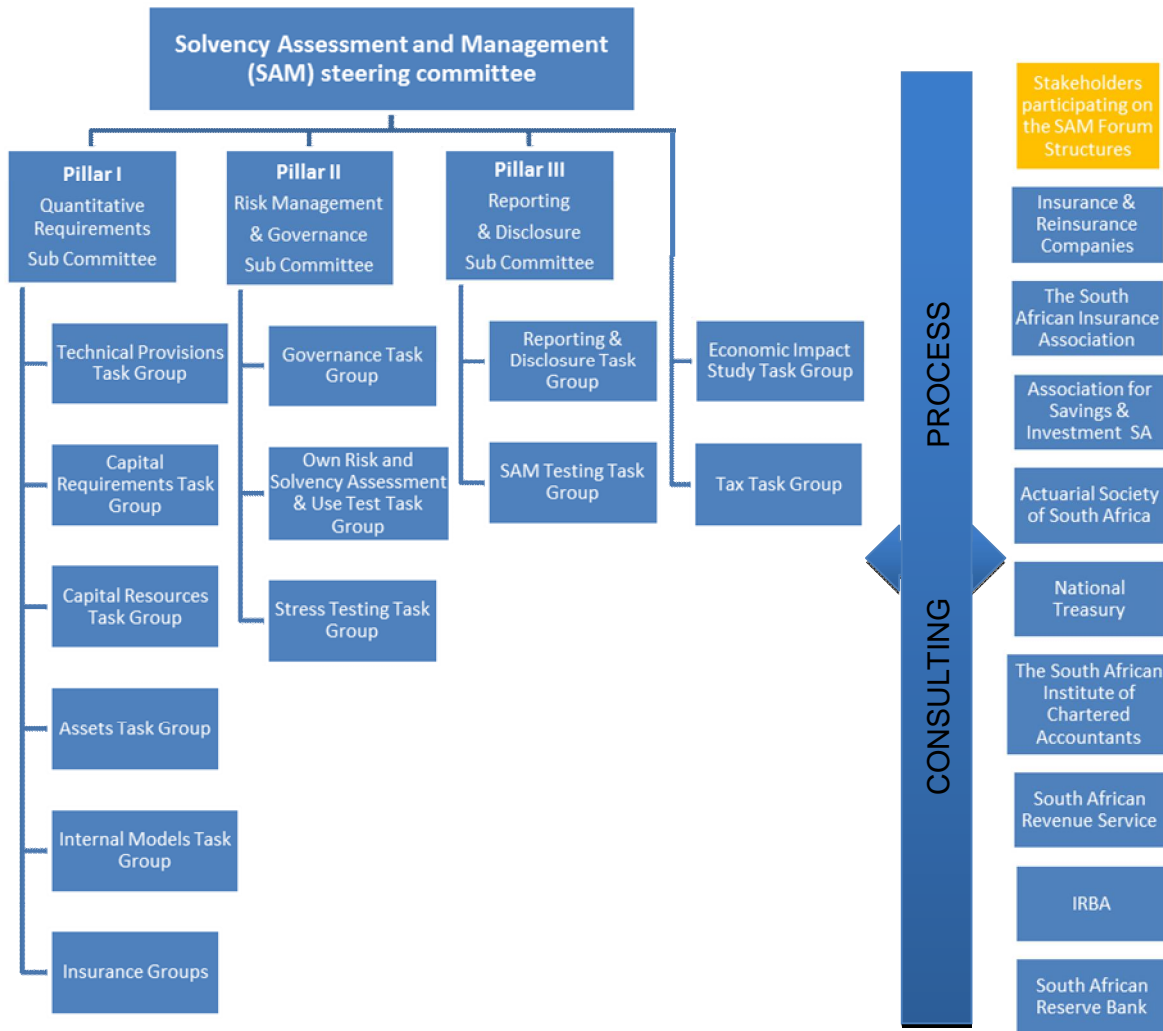
The broad policy approach used by the Financial Services Board is given substance through initial proposals for primary and secondary legislation as a result of the outputs from the various Solvency Assessment and Management (SAM) task groups. All SAM task groups have wide representation by all stakeholders impacted by the envisaged SAM legislation (Financial Services Board 2012, 2013a).

At the commencement of the project in 2009, the Financial Services Board established a Solvency Assessment and Management (SAM) governance structure to provide the Financial Services Board with recommendations from all stakeholders on the risk-based framework underlying the SAM regulatory regime. Figure 1 depicts the SAM governance structure with the SAM steering committee overseeing the multi-year project.

Reporting to the steering committee are three main committees overseeing three separate aspects as follows:

- Pillar I focuses on quantitative aspects;
- Pillar II focuses on risk management and governance; and
- Pillar III focuses on disclosure.

Figure 1: Solvency Assessment and Management governance structure



Source: Financial Services Board (2012)

The Basel II banking legislation selected three pillars with similar principles to those covered by Solvency II in Europe and Solvency Assessment and Management in South Africa as indicated in Figure 1: Solvency Assessment and Management governance structure. According to Von Rossum (2005:45), the risk and capital management in the Basel II and Solvency II framework will become less rule-based and more focused on supervisory review and forward looking risk modelling and stress tests. Von Rossum

further argues that the skills and resources essential for implementing and supervising the above-mentioned framework are very similar for banking and insurance.

1.2 PROBLEM STATEMENT

Von Rossum (2005:43) argues that the insurance sector is currently in the midst of a period of changing and increasing regulation. This statement contributes to the question of how much intervention is needed by the regulator to shape the risk management of an insurance company. The answer to this question depends on what an insurance company will do in the absence of any regulation. One theory advises that no government intervention must be used unless the company, when left to its own devices, is expected to engage in unfair or socially harmful practices. This also depends on the company's primary focus and if this is to make a quick profit, some regulation may be necessary (Borch, 1981). Should the management of an insurance company take a long-term view, then no regulation might be appropriate. However, there are limits to what a government can achieve by regulation of private insurance companies operating in a free economy (Borch, 1981).

The problem that emerges is the uncertainty of the impact of changing regulatory risk management requirements on an insurance company; in addition, identifying aspects of the risk management framework associated with insurers rating themselves as ready for the Solvency Assessment and Management Pillar II risk management requirements; lastly, establishing important aspects of the risk management framework that form part of robust risk management practices and which are overlooked by insurers.

1.3 PURPOSE STATEMENT

The Financial Services Board conducted a Pillar II Readiness Survey in June 2012, which was mandatory for all insurers. The survey was followed up with selected interviews with insurers. In November 2012, the Financial Services Board presented the high-level findings of the key strengths and weaknesses of governance structures currently used by

insurance companies. The full report was made available to the insurance industry in June 2013 (Financial Services Board, 2013b, 2013c).

In the study, data obtained from the Pillar II Readiness Survey will be used to establish the self-assessed readiness of insurance companies for the risk management requirements of Solvency Assessment and Management.

The purpose of the study is to focus on how Pillar II (Risk Management & Governance) aspects of Solvency Assessment and Management will impact the risk management framework of an insurance company. More specifically, it will consider how existing risk management policies and procedures need to evolve to remain compliant and effective in a future insurance industry subject to the Solvency Assessment and Management requirements.

1.4 RESEARCH OBJECTIVES

The study is guided by the following research objectives:

- to understand how insurance risk management practices have evolved over time;
- to identify which factors are associated with insurance companies rating themselves as ready for Solvency Assessment and Management Pillar II risk management requirements;
- to determine the gap between effective risk management practices described in literature and risk management practices insurers perceive as relevant to be ready for the Solvency Assessment and Management requirements.

1.5 IMPORTANCE AND BENEFITS OF THE PROPOSED STUDY

The Financial Services Board's report on the survey provided the insurance industry summarised statistics on the industry's level of readiness to enable insurance companies to benchmark themselves against their peers. In addition, this report did not analyse the relationship between the risk management aspects in place and the level of preparedness

of insurers. Because the Financial Services Board's report on the survey did not analyse the association between the aspects required in the Solvency Assessment (SAM) risk management framework, this created an opportunity to analyse the relationship in this study.

Furthermore, South African insurance companies are channelling existing resources in the consultative process into the SAM governance structures to contribute to the development of SAM. As a result, scarce resources are left to consider how SAM will impact the risk management framework of an insurance company.

Achieving the research objectives will be a proactive contribution to an area currently not receiving attention from insurers. The study would therefore provide assistance to insurers in positioning their future risk management framework.

1.6 DELINEATIONS AND LIMITATIONS

The changes in regulation impact the global financial sector, including banking and non-banking institutions. The implementation of Solvency Assessment and Management will specifically impact the insurance industry. While the literature review focuses on international and South African sources, the study focuses only on South African long-term and short-term insurance companies registered with the Financial Services Board. The study considers the future impact of regulatory changes yet to be implemented resulting in limited literature available on the impact of implementing Solvency II in Europe and Solvency Assessment and Management in South Africa on 1 January 2016.

The impact of Solvency Assessment and Management on the risk management framework of insurance companies will be assessed through the analysis of the data from the Pillar II Readiness Survey. The Pillar II Readiness Survey was a compulsory survey representing all the life and non-life registered insurance companies in South Africa. Because of the confidentiality clause in the Solvency Assessment and Management Pillar II Readiness Survey between the Financial Services Board and the insurers, the Financial Services

Board could only provide the responses to the structured questions. Therefore, the study is limited by the information which the Financial Services Board made available for analysis.

1.7 CHAPTER OVERVIEW

Chapter 2 provides a **literature review** on the way regulation shapes the role of risk management in insurance companies. The literature review takes a global perspective on the impact of economic and political forces on the evolution of regulation and then focuses on the evolution of the South African financial regulatory and supervisory system. Because the global financial crisis caused regulators worldwide to change their focus towards risk management, the role and importance of a holistic risk management approach are discussed. The literature review considers the lessons learnt from risk management failures during the banking crisis and how these could strengthen insurance risk management practices. Prior studies on the current risk management practices are then discussed after which the future role and importance of risk management in an insurance company are explained.

The **research method** is outlined in Chapter 3, explaining the research design and methodology considerations. A secondary data analysis approach was selected and applied to the data collected by the Financial Services Board on the Pillar II Readiness Survey. The appropriateness of the survey research method, namely a questionnaire, is considered followed by a discussion of the data received and the statistical techniques selected to analyse individual relationships.

Chapter 4 contains the **data analysis** of the insurers' self-assessed readiness for the Solvency Assessment and Management Pillar II risk management requirements. An overview is provided of the descriptive statistics from the data used in the study followed by an analysis of identified individual relationships pertinent to the risk management framework. The key relationships analysed consider the insurers' responses to risk management questions and the insurers' self-assessed current compliance with the Solvency Assessment and Management requirements, using Pearson's χ^2 test and Fisher's exact test.

An **interpretation of results** is provided in Chapter 5, with an analysis of the individual relationships considered in the study. Insurers perceived relevance of the risk management system, risk management policies and business continuity to be ready for Solvency Assessment and Management is discussed in the context of previous research and practices on risk management.

Chapter 6 provides the **conclusion** of the study, a summary of the findings, the conclusions of the research objectives, the contribution and importance of the study and recommendations for future research.

1.8 CONCLUSION

Global regulatory changes of risk management in insurance companies acted as a catalyst for the South African insurance regulator to follow suit and similarly adapt the South African insurance regulation. The revised insurance regulation is termed Solvency Assessment and Management (SAM) and its implementation will impact life and non-life insurers, however, the level of the impact remains uncertain. To assist insurers with preparing for SAM, the Financial Services Board conducted a Pillar II Readiness Survey to assess the readiness of the insurers for the SAM requirements. The study focuses on understanding the insurers' readiness for the SAM Pillar II risk management requirements and identifying the aspects of the risk management framework associated with insurers that rated themselves as ready or not.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

Over the years, many theories have been developed to understand the necessity of regulation and to assess regulatory behaviour. The theories evaluate what regulation should be like in a perfect world and which proposals on actions regulators should have taken in financial crisis events. These theories all had the benefit of hindsight in formulating proposals to remedy shortcomings identified in regulation.

The literature review considers contemporary theories on catalysts for regulatory changes that may stem from economics or politics. The review also considers how key economic events tested regulation, highlighted shortcomings and shaped the regulatory landscape, for example, the 2007 to 2009 global financial crisis. These regulatory changes have not been limited to international markets, therefore, the focus moves locally to assess how South Africa weathered the financial crisis and how the South African regulatory architecture evolved.

Linking the impact of regulatory evolution with changes in the risk management function requires a study of the risk management function. Of particular interest are the governance structures and risk management framework that withstood the global financial crisis of 2007 to 2009. Key reasons for the success of these structures are considered and compared with the three lines of defence model often used in the insurance industry. Finally, the literature review concludes on lessons learnt from the banking industry and considers the role of the risk management function in an insurance undertaking.

2.2 EVOLUTION OF REGULATION

The purpose of an insurance regulator is to protect policyholders and society against the failure of insurance companies. Failure of insurance companies is possible when prudent financial standards are not being met or when management is insufficiently proactive in the ongoing management of the insurer (Klein, 1995). According to Ellis (1990:285), regulators

are aware that solvency margins can never replace the basic soundness of an insurance operation emanating from good management.

Substantial regulatory developments occurred over the last decade from a desktop approach meaning that regulatory authorities monitor observance of financial requirements by checking statutory returns (quarterly and annual returns) compulsorily submitted to the regulator on a quarterly and yearly basis (Ellis, 1990:286). Since then, the Solvency Assessment and Management framework has been developed to create a risk-based framework for South African insurers and insurance groups. Therefore, the risk-based supervision approach focuses more on identifying the inherent risk of an insurance company and the mitigating factors the management of an insurance company has in place to manage inherent risks (Financial Services Board, 2012, 2013a).

The risk-based supervision approach is also followed by other international regulators, for example, the National Association of Insurance Commissioners (NAIC) of the United States (US), which in 1992 adopted risk-based capital (RBC) requirements for life insurers. Another prominent example of a risk-based regulatory regime still under development is found under the name of Solvency II in Europe (Elderfield, 2009).

The transition of regulation from a desktop approach to a risk-based approach was prompted by economic and political forces. According to Klein (1995:365), numerous theories have been developed over the years to understand the necessity of regulation and to assess regulatory behaviour. The theories evaluate what regulation should be in a perfect world and, on the other hand, what actions regulators actually take in financial crisis events.

The two theories on which Klein focused were the traditional public interest theory and the economic theory. The traditional public interest theory scrutinises the key part regulation plays in improving the overall financial soundness of the market and economy during and after a financial crisis. On the other hand, a second theory, the economic theory, questions the traditional view by arguing that regulation is mainly driven by public officials' desire to redistribute resources to maximise their political support, which tends to favour concentrated economic interest rather than the public interest (Klein, 1995:365). Starting

with the traditional public interest theory, attention is first directed at the impact of economic forces on the evolution of regulation.

2.2.1 Impact of economic forces on the evolution of regulation

The substantial number of insurance insolvencies and the market downturn during the second part of the 1980s questioned the capability of insurance regulation (Klein, 1995). Research into these failures and lessons learnt resulted in many large insurance companies requiring the chief risk officer reporting directly to the chief executive officer and his or her board of directors (Lehmann & Hofmann, 2010).

The equity market downturn during 2001 and 2003 led to the reassessing of the asset-liability management function as well as the role the risk management function plays in the management of insurance companies (Lehmann & Hofmann, 2010). Regulation was tested again from 2007 to 2009 with the financial crisis that started in the US during a housing bubble where consumers were allowed to over-leverage themselves and eventually defaulted on their mortgage debt obligation with multiple effects felt in various parts of the economy (Harrington, 2009).

Insurers were not immune to the crisis with the prominent example being AIG, an insurer that was severely affected by the credit default swaps within its financial products. Following the rapid increase in mortgage default rates, AIG recorded enormous losses overall while insurance subsidiaries in the group continued to operate profitably. Being a large insurer with systemic consequences if left to fail, the US government decided to provide federal assistance. This assistance in itself raised additional concerns about the adequacy of regulation. However, Harrington (2009) claims it is uncertain whether any of AIG's globally regulated insurance subsidiaries would have failed if the US government did not intervene. According to Harrington (2009), this prompts the question of placing the responsibility for failure at the doorstep of banking regulations rather than insurance regulations, since most federal assistance was paid to banking counterparties during the AIG crisis.

The continuing financial downturn raised the concern of whether there is a need for a systemic risk regulator for insurers and other non-banking financial institutions. The International Association of Insurance Supervisors (IAIS) emphasises the need to urgently identify insurers and non-banking institutions that are systemically important and to implement measures to reduce the impact of failure those companies might have on the insurance industry and economy. Therefore, the IAIS together with other standard setters, banks and regulators initiated a worldwide enterprise to recognise potential global systemically important financial institutions (G-SIFIs) (International Association of Insurance Supervisors, 2012).

The importance of a systemic risk regulator is debated by Harrington (2009), because he is of the opinion that a systemic risk regulator would not be good policy and that companies forming part of the G-SIFIs could be observed as too big to fail, reducing market discipline and giving it an inappropriate competitive advantage. When comparing the insurance sector with the banking sector, it is evident that the systemic risk for an insurance company is lower than that for a bank, since the capital adequacy requirement is higher for insurance companies than for banks, therefore, reducing their risk of failure (Financial Stability Board, 2013b; Harrington, 2009).

Skipper and Klein (2000) found that the financial market and in particular the insurance market are important elements in economic development. The more evolved and efficient a country's insurance market is, the healthier its economy and opportunity for growth and ultimately promoting financial stability in that country. Significant economic events have tested and shaped regulation. Although the change in regulation happens after key economic events, the link between economic forces and the evolution in regulation as postulated in the public interest theory appears to have merit. Having considered the traditional public interest theory, the alternate economic theory is discussed next.

2.2.2 Impact of political forces on the evolution of regulation

The financial sector is globally one of the most regulated industries. The laws and regulations governing the banking and non-banking institutions contribute to the stability of

a country's political process (Grace & Leverty, 2012). Stigler (1971) suggests political undertones in the formulation of regulation and questions regulation's capability to enhance social welfare. Stigler (1971) argues that political stakeholders will seek to use the regulatory process within their control in such a way to advance political goals and aspirations.

The influence of politics on regulation goes beyond the laws and regulations of the ruling political party. Grace and Leverty (2012) argue that political influence on regulatory evolution may differ before or after elections. According to Grace and Leverty (2012), one of the factors that will impact regulatory intervention is the cost accompanying the closing of a failing company. A small group is mainly responsible for the cost with the focus primarily on the outcome, while the advantage of a solvent industry and healthy economy is only achieved over time. Politicians may therefore be more vulnerable to group pressure from concerned parties before the elections (Peltzman, 1976; Stigler, 1971). Other factors are that politicians avoid bad publicity before elections and because the regulator's ability is examined when companies fail, they therefore decide to postpone the intervention until after elections (Grace & Leverty, 2012).

Insurance regulation continuously evolves from economic and political forces as outlined above. These forces require regulators globally to respond with the changes to insurance regulation, while those regulators who fail to respond, could be at risk of increased failures within their financial system (Klein, 1995). Klein is of the opinion that continued research is required to recommend changes to insurance regulation that strike a balance between economic considerations and secure insurance regulation. Such recommendations for changes to insurance regulation will influence the role of risk management in insurance companies.

The above-mentioned literature evaluated the global evolution of regulation. Since the study focuses on the impact of the implementation of Solvency Assessment and Management on the role of risk management in insurance companies, it is therefore necessary to assess the evolution of regulation in South Africa.

2.2.3 Regulatory developments in South Africa

Historically, the South African financial regulatory and supervisory system evolved from an institutional approach that transformed into a functional approach in the late 1980s. The revision of the South African regulatory structure in the 1990s resulted in the functional approach to metamorphose into a partially integrated system. The structure of a partially integrated system consists of a main principal, such as the South African Reserve Bank regulating the banking sector, and a multi-sector regulatory approach for the non-banking financial services, such as the Financial Services Board (Botha & Makina, 2011:27). Furthermore, Botha and Makina (2011) emphasise that the main driver of the South African regulatory framework is to keep abreast of international trends and market requirements.

The then South African Minister of Finance, Pravin Gordhan, argued that having countries' financial sectors globally integrated but nationally regulated posed a problem. For this reason, there needs to be minimum international standards and greater co-ordination among different national regulators (National Treasury, 2013).

Through South Africa's participation in multilateral institutions and forums such as the International Monetary Fund, the G20, the Financial Stability Board, the Basel Committee on Bank Supervision, the International Organisation of Securities Commissions and the International Association of Insurance Supervisors, South Africa has committed itself to implement higher global financial standards to make the South African financial sector safer and better (National Treasury, 2013).

However, this is not the first time South Africa has considered its financial sector. Already in 2007, the government launched an official evaluation of South Africa's financial regulatory system. This evaluation was expanded in 2009 to take into account the lessons learnt from the global financial crisis that began in 2008. This work culminated in a published policy document, *A safer financial sector to serve South Africa better*, in 2011 (National Treasury, 2011). This policy document noted that the domestic financial sector had weathered the global financial crisis relatively well due to the country's comprehensive macroeconomic fundamentals and a healthy financial regulatory framework. However, it

cautioned against becoming complacent and proposed to change in the direction of a twin peaks model of financial regulation (National Treasury, 2011).

Even though each jurisdiction regulates their financial sector differently, the regulatory structures can be divided into four approaches to financial supervision. Firstly, the institutional (silo) approach exists when the legal structure of the entity determines the overseeing regulator, for example, if the entity is a bank or an insurance company. This approach has been adopted by China, Hong Kong and Mexico. Secondly, the integrated (unified) approach is where a single regulator regulates all financial sectors. This approach has been adopted by Canada, Germany, the United Kingdom (UK), Norway, Iceland, Denmark, Sweden, Japan, Qatar and Singapore (Botha & Makina, 2011; G30 Report, 2008).

Thirdly, the functional (hybrid) approach exists when supervisory oversight is determined by the business that is conducting and not the legal entity, for example, if one entity has banking, insurance and securities business lines. These business lines would each be overseen by a functional regulator. This approach has been adopted by the United States, France, Italy, Brazil and Spain. Lastly, the twin peaks approach exists when the regulatory function is split between two regulators with one focusing on prudential supervision and the other on market conduct. This approach has been adopted by Australia and the Netherlands (Botha & Makina, 2011; G30 Report, 2008).

A country's regulatory framework reflects the political history, culture, economic development and the local business structure of that country. It is not possible for a pure approach to financial supervision to exist and it is therefore common that regulators touch the borders of the different approaches (Botha & Makina, 2011; G30 Report, 2008).

The twin peaks model envisaged for South Africa will separate the prudential and market conduct supervisions of the financial sector. The prudential regulator's responsibility will be carried out by the South African Reserve Bank, which will then oversee the regulation and supervision of banks and insurance companies. Its focus will be to establish and encourage the safety and soundness of regulated financial institutions (National Treasury, 2013).

The market conduct regulator's responsibility, on the other hand, will remain with the Financial Services Board, which will adapt to the revised mandate for market conduct regulation. Its focus will be to safeguard consumers and policyholders of financial services and promote the trustworthiness of the South African financial system (National Treasury, 2013).

The South African Government through the Minister of Finance is responsible for the policy framework underpinning the regulation of financial systems. In terms of this framework, the South African Reserve Bank will take a leading role in promoting financial system stability by becoming the systemic regulator for the South African financial system, supervising and monitoring the financial system to give effect to the financial stability objective (National Treasury, 2013).

The above-mentioned twin peaks model was studied by Klein (1995:368), who found that insurance-regulated activities were divided into two main categories: solvency regulation and market regulation. Klein (1995) also found that solvency regulation's main objective was to guard policyholders against the threat of insurance companies failing, while market regulation focused on sound insurance prices, products and business practices. Skipper and Klein (2000) also support the theory that regulation's ultimate goal should be to protect policyholders and promote public interest and therefore the twin peaks model will contribute to a successful regulatory structure.

Considering countries that have been operating in terms of the twin peaks model, the G30 report (2008) highlights the advantage of the twin peaks model as being more cost effective and efficient for both the insurer and the regulator. After the 2007 to 2009 global financial crisis, it was found that the twin peaks model was viewed as the most superior model amongst the alternatives (Botha & Makina, 2011:35).

The study focuses on the solvency regulation of insurance companies and according to Klein (1995), solvency monitoring entails a variety of activities that includes financial reporting, early warning systems, on- and off-site financial analysis and examinations. This theory by Klein complements the current framework for prudential regulation that requires insurers to submit unaudited quarterly reports and audited annual statutory returns to the

Financial Services Board, which is the principle basis of information for the solvency monitoring process (Ellis, 1990). The examination activity, which focuses on on-site visits conducted at insurance companies, emphasises corporate governance and the role of risk management in an organisation (Kelly, Kleffner & Leadbetter, 2012).

The observed global economic events and political events over the past two decades have also influenced the South African regulatory landscape. Apart from the Solvency Assessment and Management regulatory regime being developed for insurers, who are a sub-component of the financial sector, the entire financial system's framework for supervision is also changing (Botha & Makina, 2011).

While South African regulatory changes are still being implemented, lessons can be learnt from studying a regulatory system that survived the 2007 to 2009 global financial crisis. Such lessons are vital considering that other First World regulatory systems struggled to weather the financial storm.

2.3 A CURRENT AND ROBUST REGULATORY SYSTEM THAT SURVIVED A FINANCIAL CRISIS

The global financial crisis of 2007 to 2009 caused the insolvency of several large financial institutions. Canada was the only country among the G8 countries (Canada, France, Germany, Italy, Japan, Russia, the United Kingdom and the United States) that did not have to intervene and give financial support to troubled financial institutions (Kelly *et al.*, 2012). Kelly *et al.* (2012) investigated what Canada did differently and found that the Canadian regulatory framework was successful during the economic downturn due to certain fundamentals that it had in place to survive the crisis. These fundamentals were an existing Canadian federal regulator who followed a holistic risk approach to insurer monitoring that focused on system-wide issues, legislation that governed consistent solvency standards and investment guidelines that inspired prudent risk taking.

Apart from a holistic approach from the regulator, Kelly *et al.* (2012) also found that a holistic risk management approach was very important to an individual insurer's

sustainability particularly when the ownership structure through a group structure introduced additional group risk to the insurer. The effectiveness of the *ex ante* and *ex post* cross-border and holistic approach used by the Canadian regulator is considered below.

2.3.1 *Ex ante* regulatory structure

An *ex ante* or before the event regulatory structure ensures that solvency regulations are in place to establish prudent investment strategies and minimum capital requirements as well as to support adequacy of reserves.

The Canadian Federal Insurance Companies Act of 1991 assigned responsibility to monitor solvency to the Office of the Superintendent of Insurance (OSFI) for federally regulated insurers. The Canadian *ex ante* supervisory system has been credited to maintaining the stability and soundness of the Canadian financial system through the global financial crisis with the three particularly salient components: firstly, capital requirements; secondly, a holistic risk management approach to firm sustainability; and lastly, oversight of the inherent risks in the system (Kelly *et al.*, 2012).

The OSFI's approach to solvency monitoring is deliberately different from the National Association of Insurance Commissioners (NAIC) approach for the reason that Canada tries to analyse the inherent risks each company faces and the quality of its risk management rather than focusing only on ratios. The Canadian regulator considers more than the ratios and emphasises the quality of risk management, which has to be done by the management of an insurance company (Kelly *et al.*, 2012).

Kelly *et al.* (2012) also considered countries that did not weather the financial crisis as well and found that countries such as the United States, United Kingdom, France and the Netherlands had relatively low observance of international solvency supervisory standards, particularly with key prudential core principles for group supervision. Historically, group relationships have not been accounted for in solvency oversight in such countries and the absence of a holistic approach showed.

The trend to internationalisation and the development of large international financial conglomerates requiring group supervision and collaboration across jurisdictions have been identified by the IAIS (International Association of Insurance Supervisors, 2013). Therefore, prudential regulators worldwide have been tasked to reduce asymmetric information in the insurance marketplace internationally (Financial Stability Board, 2013b).

Kelly *et al.* (2012) propose two *ex ante* regulatory designs that recognise the need to improve transparency of transactions in this increasingly global interconnected marketplace. Firstly, solvency supervisors should require all financial institutions to submit an organisational infrastructure map annually, identifying all legal entities, the location of critical information technology systems and the interconnections across affiliates with respect to instruments such as guarantees, contractual commitments or other significant intragroup transactions. Secondly, supervisors should ensure that regulated financial institutions maintain legal connectivity with assets and information technology during intragroup transactions.

Prior research done by Leadbetter and Dibra (2008) and Kleffner and Lee (2009) on insurance company insolvency found that several of the reasons why insurance companies fail when focusing on corporate governance and operational risk are not evident through investigating financial indicators. Financial risk metrics are no reliable forecast of insolvency since they fluctuate for companies that are solvent as well as for those that become insolvent. This emphasises the importance and benefits of using a holistic enterprise risk management approach to solvency supervision (Kelly *et al.*, 2012).

In addition to acting before the event, the Canadian regulator's success can also be attributed to the *ex post* regulatory structure, which will be discussed in the next section.

2.3.2 *Ex post* regulatory structure

The *ex post* or ~~after~~ *after the fact* regulatory structure promotes confidence in the insurance industry. There is a role for *ex post* regulation to take corrective actions to prevent failure of an insurer and to develop a formalised distressed resolution plan in case failure cannot

be prevented. This view is supported by the Institute of Internal Auditors (2014), stating that business continuity plan failure could result in insurer failure, which, in turn, should activate resolution plans on the business rescue of an insurer. In Canada, distressed resolution for financial institutions is governed for the most part by four statutes: the Bankruptcy and Insolvency Act, the Companies Creditors Arrangement Act, the Canada Deposit Insurance Corporation Act and the Winding-up and Restructuring Act (WURA). The applicable statute depends upon the legal entity (Kelly *et al.*, 2012). According to Kelly *et al.* (2012), the distress resolution framework was an important but generally neglected component of the regulatory design in the global financial crisis where it was demonstrated to be one of the weakest links in most national financial sector stability frameworks.

During the financial distress situations, the priority of the national resolution authorities was domestic objectives, for example, during the Lehman Brothers resolution, American resolution authorities supported the domestic broker-dealer subsidiary but refused to support or co-ordinate the resolution of subsidiaries in 49 other countries (Kelly *et al.*, 2012).

The lack of a robust framework for resolution of distressed financial conglomerates was noted by the Basel Committee for Bank Supervision and also recognised by the Financial Stability Board, which, at the behest of the G20 countries in the November 2008 Washington declaration, has begun to study the issue (Financial Stability Board, 2013a). The United Nations Commission on Trade Law also has a working group developing a framework for cross-border insolvencies. Although there has been less research dealing with approaches for winding-down a financial conglomerate, the literature rarely proposes a framework (Kelly *et al.*, 2012).

Since the financial sector is extremely interconnected, Kelly *et al.* (2012) recommended four improvements with respect to the *ex post* regulatory design: firstly, the inclusion of the solvency framework in the International Monetary Fund's (IMF) FSAP reviews of the financial sector; secondly, the establishment of an integrated insolvency framework that encompasses a complete resolution framework for financial institutions to increase the capacity to respond to group failures and enhance the transparency and comprehensibility

of the resolution framework for stakeholders. The third improvement is the modernisation of the insurance insolvency statutory provisions to enhance asset realisation and reduce timelines for the resolution of failed insurance companies. The last improvement is the establishment of a protocol for resolution of distressed financial conglomerates that activates the contingency and readiness plans of the relevant guarantee funds.

In their review, Kelly *et al.* (2012) compared the success of the Canadian regulatory design that persevered during the global financial crisis with that of other less successful regulatory designs. From this review, it was highlighted that a broad-based risk management approach to company sustainability is needed coupled with an assessment of the inherent risks of the solo legal entity and the complete group structure.

With the increasing number of failures in financial companies, more emphasis is being put on strengthening governance structures. The Organisation for Economic Cooperation and Development (OECD) compiled guidelines on recommended governance structures, which form a natural follow-on from the lessons discussed in the previous section (OECD, 2011).

2.4 IMPORTANCE OF RECOMMENDED GOVERNANCE STRUCTURES IN A RISK-BASED FRAMEWORK

The Organisation for Economic Cooperation and Development (OECD) guidelines on insurer governance state that the soundness and integrity of financial institutions and their conduct towards consumers depends not only on regulation and supervision, but also on the quality of governance practices within financial institutions+ (OECD, 2011:8). Das, Quintyn and Chenard (2003) also argue that regulatory governance has a substantial impact on the financial stability of the financial industry and in particular the banking and non-banking institutions. However, the regulator alone cannot be held responsible for a country's financial stability since there are factors outside the regulator's control, for example, the macroeconomic policies, monetary policy and the existence of a financial sector safety net (Das *et al.*, 2003). This emphasises the importance of a systemic risk regulator and contributes to South Africa moving towards a twin peaks model (National Treasury, 2013).

The growing number of insolvencies and the failure of companies in the financial sector highlight the need for strengthening the governance structure of insurance companies (Das *et al.*, 2003). Therefore, Skipper and Klein (2000) argue that the financial market and in particular the insurance market are important elements in economic development. A stable insurance market requires robust insurance regulation, which, in turn, influences the shape of governance structures in terms of insurers. The OECD recommends that the design of insurance governance requirements ~~im~~ improve the quality and independence of decision-making, promote sound risk management and internal control policies and procedures, and promote proper transparency, reporting and disclosure+ (OECD, 2011:50).

As mentioned above, the insurance governance framework plays a significant role in the regulatory and supervisory framework for insurance. Therefore, it is important to ensure a synergy between creating an insurance regulatory framework for insurers that promote high quality governance practices and promoting independent decision-making and implementing appropriate governance practices. Hence, it is ultimately the board of directors' responsibility to implement the governance practices and manage the insurer in terms of the rules and regulations of an appropriate regulatory framework (OECD, 2011).

Furthermore, the OECD's (2011) guidance on the management structure of insurers is that insurers should establish an internal organisational structure with appropriate management committees (e.g. risk management, audit, investment and asset-liability management committees). These management committees should oversee the business on a company-wide basis, promote reporting and disclosure and ensure sound decision-making.

A sound risk management function is associated with a sound governance structure. Having a sound risk management function gears an organisation to be better prepared for any unforeseen events and improves the company's probability of surviving a financial crisis (OECD, 2011). The role of risk management in an insurance company is discussed in the next section.

2.5 THE ROLE OF RISK MANAGEMENT IN AN INSURANCE COMPANY

2.5.1 The three lines of defence model

Decision-making in an organisation involves an acquisition and allocation of resources in order to produce goods and services at such quality and cost that the organisational goals can be realised (Van Gelder, 1990). Van Gelder (1990) argues that an organisation needs to be an open system that adapts and changes with its environment and the changing nature of threats and opportunities it encounters in that environment. It is therefore not uncommon for 21st-century businesses to have a diverse management team consisting of internal auditors, enterprise-wide risk management specialists, compliance officers, internal control experts, quality inspectors, fraud investigators and other risk and control skilled individuals operating together to manage their organisation's risk (Institute of Internal Auditors, 2013).

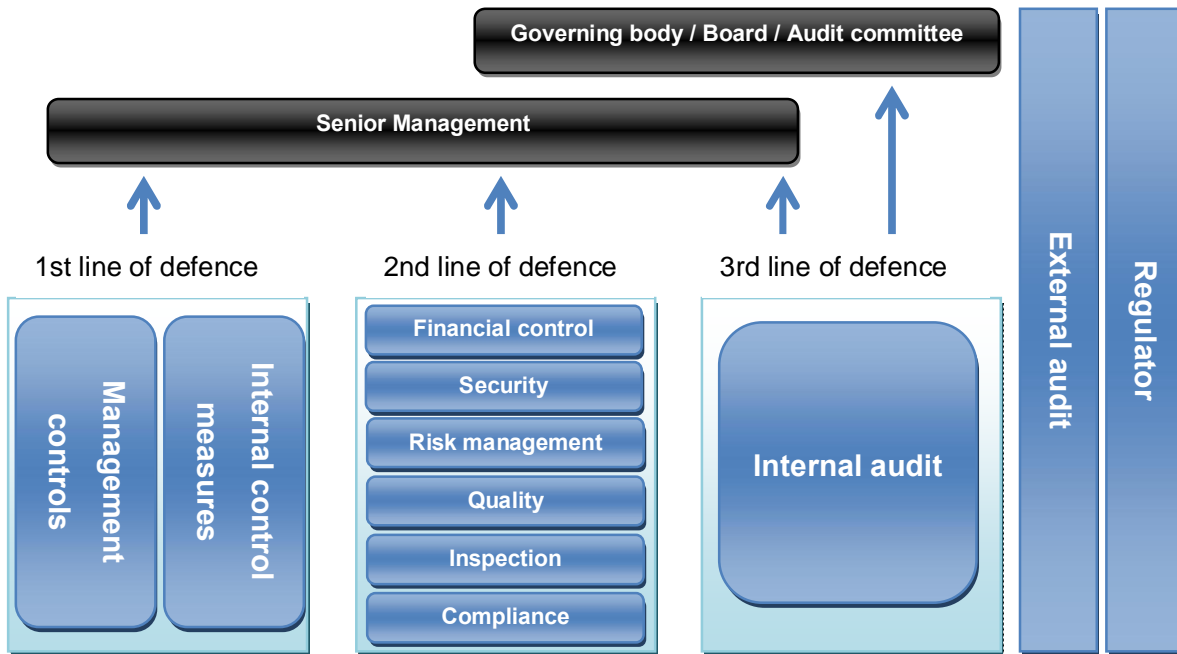
The Institute of Internal Auditors (2013) found that although the appropriate risk and control functions exist, it is important to allocate specific roles and to promote effective and efficient co-ordination among the management teams to minimise the gaps in the reporting and control function. Drzik (2005) is also of the opinion that a successful organisational structure needs to appoint the right people and establish demarcated responsibilities for each role and function.

According to Drzik (2005), it is very important to find the right balance in the organisational architecture, particularly for insurance companies. Drzik (2005) further argues that there needs to be a separation between the actuarial and finance function, risk management function, investment and operational (line) management, but with sufficient communication and clear reporting lines between these silos.

The three lines of defence model provides an easy and effective way to improve the communication between reporting lines and the risk management function, which is the heart of the organisational structure. In the three lines of defence model, management control is the first line of defence in risk management, the various risk control and

compliance oversight functions implemented by management are the second line of defence, and independent assurance is the third line of defence. Each line of defence as illustrated in Figure 2 plays a distinct role in the organisation's wider governance framework.

Figure 2: The three lines of defence model



Source: Institute of Internal Auditors (2013)

The board of directors and senior management are the key participants assisted by the three lines of defence and it is their ultimate responsibility to make sure that the model is mirrored in the organisation's enterprise risk management framework and control process (Institute of Internal Auditors, 2013).

The IIA (2013) further argues that the senior management and the board of directors have joint responsibility to establish the organisation's objectives and strategies and to implement the governance structures and processes to best manage and mitigate the risks associated with the business. The three lines of defence model is only successful with continued support and supervision of the organisation's board of directors and senior management (Institute of Internal Auditors, 2013).

External auditors, regulators and other external bodies as illustrated in Figure 2 do not form part of the organisation's structure, however, they still play a key role in the organisation's whole governance and control structure (Institute of Internal Auditors, 2013). This is particularly the case with the Solvency Assessment and Management framework that is being developed by the Financial Services Board to create a risk-based framework for South African insurers and insurance groups (Financial Services Board, 2012). When co-ordinated effectively, external auditors and regulators can be seen as extra lines of defence, providing independent oversight to the organisation's shareholders, board of directors and senior management (Institute of Internal Auditors, 2013).

While the three lines of defence model provides a generic structure for managing risk, the following section considers the evolution of this risk management function in terms of an insurer.

2.5.2 Evolution of risk management in an insurance company

The insurance industry is under significant pressure from regulators worldwide to successfully change their focus towards risk management (Drzik, 2005). According to Lehmann and Hofmann (2010:68), risk management in this broader sense is essential to achieve a company's strategy, operational and financial objectives. The question is: what caused the risk management failures? Before looking at what went wrong, it is important to understand the role of risk management. Stulz (2008:41) argues that the job of risk management is to ensure that top management knows and understands the probabilities associated with possible outcomes of the firm's strategy before they make decisions to commit the firm's capital.

The process of risk management starts with the first step of identifying and measuring the risks the insurer is facing. The insurance company will use a risk metric, for example, the widely used value at risk (VaR) model (Lehmann & Hofmann, 2010), which will assist the senior management to understand the risk position of the company. Choosing the correct risk metrics is essential since they are the cornerstone of risk management. The correct risk metrics define what senior management know about the company's overall risk

position. There is a probability that risk management can fail from the start if the risk managers evaluating the risk use measures that do not match the company's strategy (Stulz, 2008).

According to Stulz (2008:41), once a risk measure is chosen, two basic kinds of mistakes can emanate when measuring risk; firstly, known risks can be mismeasured; and secondly, important risks can be ignored, either because they are undetected or wrongly viewed as immaterial. The second step in the process of risk management is communicating the identified and measured risks to the senior management and board of directors. Failure in the effective communication of risk information is also a failure in risk management (Stulz, 2008).

The third step in the process of risk management lies with the board of directors, who has to decide which of the risks communicated to the board of the company will actually accept. At this point in the process, the role of risk management is to ensure that the company actually takes these risks and no other risks that were not identified and measured. It is therefore the risk manager's responsibility to keep abreast of and manage the company's risk and that the risks adhere to the established guidelines (Stulz, 2008).

In order to resolve the above-mentioned pitfalls in the risk management process, risk management has evolved into a broader scoped and more integrated process termed *enterprise-wide risk management* (ERM). ERM is a newly developed process designed to identify potential events that might pose a threat to the company and to assist the management and the board of directors to manage these risks within the company's risk appetite and to ensure that the company reaches its objectives (Atluntas, Berry-Stölzle and Hoyt, 2011).

Enterprise-wide risk management (ERM) is a management tool with a holistic approach towards risk management, which attempts to limit the probability of large losses occurring in the organisation and ultimately enhances shareholder wealth. The study by Atluntas *et al.* (2011) on German property-liability insurance companies, which are the European equivalent of non-life insurers in South Africa, considered the proportion of property-liability insurance companies that had already implemented ERM.

Atluntas *et al.* (2011) used a survey consisting of 95 German property-liability insurance companies that accounted for 90% of the German property-liability insurance market. The topics dealt with in the survey considered risk measurement and quantification, responsibility for risk management, economic capital competence, risk reporting, decision-making and satisfaction with the current risk management practices as well as the impact of Solvency II+(Atluntas *et al.*, 2011:416).

Some of the main findings were, firstly, that 89% of the participating insurers in 2009 had in place a risk management strategy that defined their risk management system with 74% of those insurers combining risks in an overall corporate risk model; secondly, that all the insurers had risk reporting to the supervisory board in place with the majority (47%) reporting on a quarterly basis, 22% semi-annually and 31% reporting once a year.

Thirdly, Atluntas *et al.* (2011) found that in 2009 only 7% of the participating insurers did not assign risk management responsibilities. The majority of the insurers indicated that the chief executive officer was responsible for implementing the risk management strategy, followed by the chief financial officer. The remainder of the insurers were divided among another member of the management board, the chief risk officer, the department head risk management or head controlling, and lastly, the branch office managers to implement the risk management strategy.

Fourthly, they found that 99% of the participants identified risk on a regular basis either annually, semi-annually or monthly. Lastly, Atluntas *et al.* (2011) found that 92% of the participating insurers used performance measures to incentivise management and that 66% of insurers linked managerial compensation to performance measures.

Atluntas *et al.* (2011) argue that some benefits of enterprise-wide risk management (ERM) compared with traditional risk management are that ERM will bring forth more collaboration between the different risk management activities and include risks such as operational risk, reputational risk and strategic risk, which cannot be measured or collated. Among the numerous advantages of ERM is that its use enhances the effectiveness of risk management activities in an organisation. Although there is no definition for ERM, Atluntas

et al. (2011) considered and developed a conceptual framework for ERM as indicated in Figure 3.

Figure 3: The enterprise-wide risk management model



Source: Atluntas *et al.* (2011)

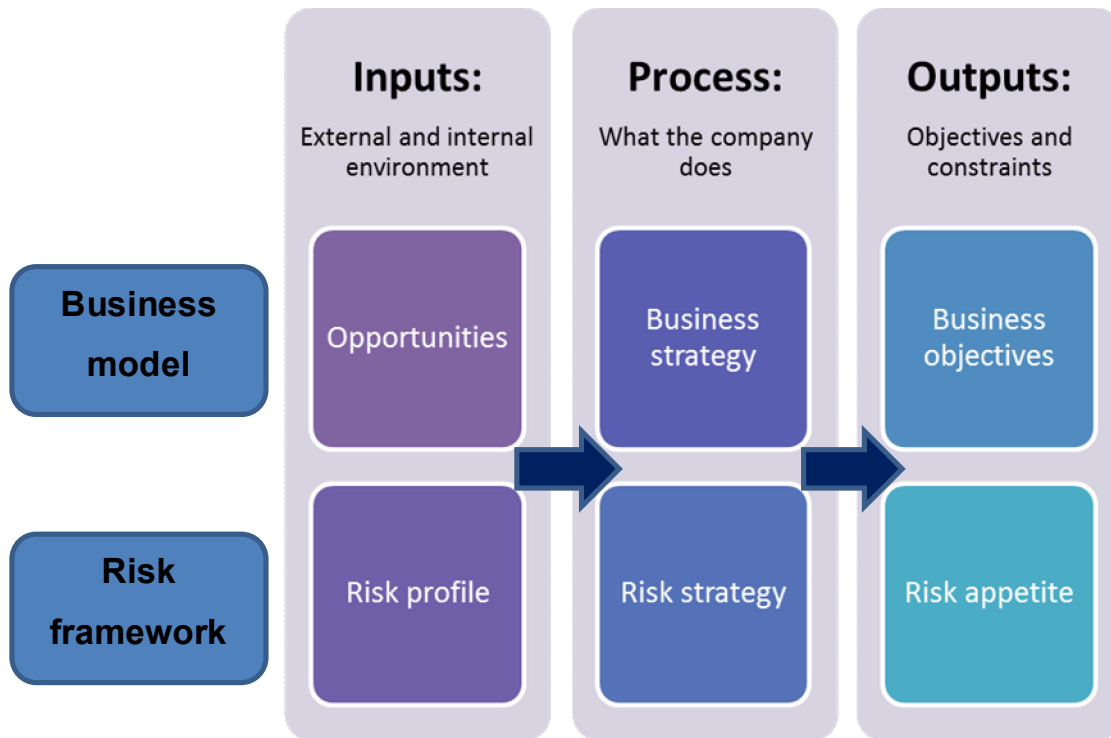
Figure 3 demonstrates that the first step in the risk management process is identifying the risk, the second step is evaluating the risk and the third and last step is choosing and implementing the suitable risk management tools. However, Atluntas *et al.* (2011:417) point out that the success of risk management in an organisation depends crucially on how the risk management function is implemented in the organisational structure of the company.

It is not easy for a modern-day organisation to integrate the identified and measured risks into business decisions. Bielski (2013) has a similar view to Stulz (2008) and Atluntas *et al.* (2011), namely that a successful organisation requires a connection between the risk

framework and the way the business operates in practice. Bielski (2013) further argues that good enterprise-wide risk management requires the entire organisation to be in agreement to establish a risk framework that improves the overall management and then connecting this with the business model.

Organisations' decision-makers spend a lot of time assessing risk and it is therefore important to develop a framework that captures and distinguishes between the different types of risks. According to Bielski (2013), risk profile, risk appetite and risk strategy are central elements in a wider risk framework. The *risk profile* is defined as all the events that might result in losses now or in the future, while the *risk appetite* is the acceptable amount of risk a company is willing to take, and lastly, the *risk strategy* is the risk profile acceptable to the company's board of directors. Bielski (2013) suggests that just as risk management needs to understand a company's risk profile, the company's management essentially needs to understand the business opportunities. These three elements can be combined and applied to the company's business model, as indicated in Figure 4.

Figure 4: Approach where the risk framework is combined with the business model



Source: Bielski (2013:25)

This approach indicated in Figure 4 allows a company to simultaneously update and develop its business model and risk framework. Because a company's business model and risk framework are interrelated, it is imperative that business opportunities and threats should be consistent with immediate, strategic and emerging risks. Bielski (2013) is of the opinion that the business strategy and the risk strategy should be developed at the same time to ensure that the risks arising from the products sold are tolerable and that the risk appetite and business objectives match.

Bielski (2013) points out that it is a challenge to get an entire organisation on the same level of understanding risk. A holistic approach is necessary to incorporate the risk framework and the business model. Successful implementation is a team effort from the risk function with collective support throughout the business. The development of a successful risk management framework takes time and is most likely to be an iterative process, which will be refined over a few strategic planning cycles.

Cantle (2013) states that risk management is an evolving discipline, and therefore it is essential to learn from and use the risk management mistakes made in the past to strengthen the role of risk management in an insurance company as indicated in the section below.

2.5.3 Translating lessons learnt from the banking industry

Comparing the insurance industry with the banking industry, Drzik (2005) found that there were similarities that could assist insurance companies to implement new ways of measuring and managing their risks by studying the lessons learnt from the banking industry. The banking crisis was predominantly a result of a series of macroeconomic temptations, which included low interest rates, booming housing markets and high levels of market liquidity that led banks and only some insurance companies to take excessive amounts of risk. These risks were not controlled effectively due to poor risk management communication and over-reliance on mathematical risk models (Ashby, 2011:330). Lehmann and Hofmann (2010) are of the opinion that this gives prominence to the role of risk management.

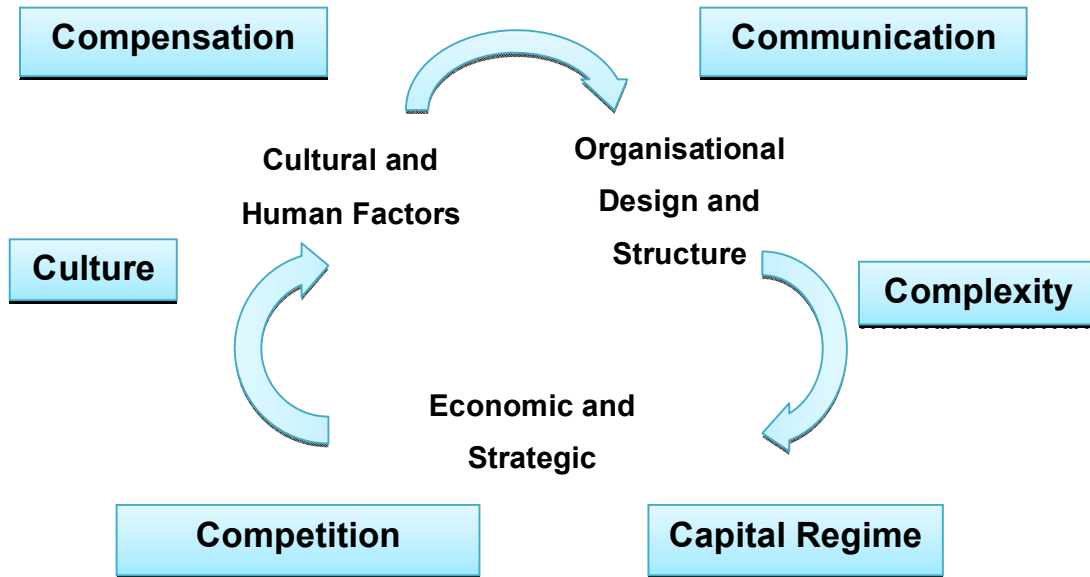
Lehmann and Hoffmann (2010) question whether risk management was a core function of a modern-day company and why it was that poor risk management was one of the main drivers of the financial crisis. The study by Stulz (2008) dealt with this question and found that the potential problem could be classified into two broad steps. Firstly, there was a failure to appreciate the changing nature of risk as well as the blurring boundary between risk and uncertainty. Secondly, there was a lack of the appropriate and timely decisions and actions based on risk management information provided to management.

The study by Lehmann and Hofmann (2010) identified differences in the role of risk management between the banking and insurance industries because of the different challenges faced by these industries. One of the most prominent differences between the two industries stems from the difference in funding model, where insurance companies do not depend on short-term capital, while banks are funded through short-term deposits and/or borrowing (Lehmann & Hofmann, 2010). The known risk between short-term borrowing and long-term lending causes banking to be an unstable business, while a run on a bank can result in a systemic catastrophe like the run on Northern Rock in September 2007 and the subsequent support from the Bank of England (Eling & Schmeiser, 2010).

Even though the insurance industry was not hit as hard as the banking industry during the global financial crisis of 2007 to 2009, the financial sectors were globally integrated due to several conglomerate groups consisting of a bank and an insurance company (National Treasury, 2013). A predominant example is the default of Lehman Brothers, which severely impacted Landeskrankenhilfe, a German health insurer, which had "200 million invested in Lehman Brothers. The three most-talked about events for the insurance industry are the government bailout of AIG, Swiss Re's write-downs due to concentration of reinsurance in credit portfolios, and lastly, the failing of Yamato Life Insurance in Japan, due to severe risk management failures in asset management (Eling & Schmeiser, 2010).

Taking into account both the similarities and differences of the banking industry, there are some important lessons insurers should take heed of to establish a stronger risk and capital management function. According to the study by Ashby (2011), the underlying causes of the banking crisis can be grouped into six categories, namely the Six Cs as indicated in Figure 5.

Figure 5: The Six C's



Source: Ashby (2011)

The Six C's can be divided into two groups, namely the important C's, which involve Culture, Communication and Capital Regime and the less important C's, consisting of Compensation, Complexity and Competition (Ashby, 2011).

Concentrating on the important C's first, Culture is in essence the risk management culture that forms part of the second line of defence in the three lines of defence model (Doughty, 2011). Ashby (2011:337) defines *culture* as a range of common human or cultural weaknesses+including greed, short-termism and the tendency to copy strategies of other institutions. When profits increase and shareholders wealth is maximised, a common cultural weakness is a lack of sufficient attention to risk management from senior management and the board of directors. In such instances, the risk management function changed into an ivory tower+or was seen as an interfering compliance-orientated+culture that left crucial risk exposures unattended. Instead, the risk management functions should rather be approached with a business-focused+culture that concentrates on strategic and operational management (Ashby, 2011:337).

For the second important C, Communication weakness occurred when the board of directors and/or senior management did not receive the necessary information to have made effective strategic decisions that could have prevented the crisis. This communication weakness can occur when management lacks the required expertise or when management on purpose withholds information, for example, for internal political reasons (Ashby, 2011; Stulz, 2008). Regarding the third important C, the Capital Regime, in particular the Basel II-based prudential regime for banks, was criticised for encouraging banks to become overly reliant on flawed mathematical models at the expense of management judgement+(Ashby, 2011:338).

Compensation, as one of the three less important Cs, is affected by cultural and human factors such as greed+. Compensation was a culprit in the crisis due to the arrangements that did not incentivise managers to evaluate, monitor and control risks as well as arrangements that did not claw back+salaries or bonuses when losses occurred, meaning that managers and in certain cases directors were not financially affected by the decisions they made (Ashby, 2011).

The fifth cause was Complexity because the financial services sector has complex business models. According to Ashby (2011:335), the interconnectedness of the financial industry relating to activities and risks creates the ideal habitat for unforeseen correlation and extreme events+. However, the complexity of the business models was not the real problem but rather the ability of financial organisations to manage the complexities of their risk exposures effectively. The last cause was Competition because economic pressure forced organisations to make the risk management decisions they did to maintain profits and deliver expected returns.

As explained by Ashby (2011), the financial crisis was a result of the quality of management. Regulators must not forget the human element+ since an organisation's success or failure depends on the ability, attitudes, behaviour, expertise and incentives of the organisation's people. These lessons can shape the future role of risk management to prevent a repeat of the mistakes made in the banking industry, as discussed below.

2.5.4 The future role of risk management

Since risk management failure was one of the main reasons for the recent financial crisis, it is important that risk governance and culture be incorporated into the whole organisation (Lehmann & Hofmann, 2010). Insurance organisations are aware that they will have to strengthen their risk management function, governance and internal control practices in conjunction with regulatory guidance (Ashby, 2011). The implementation of Solvency II in Europe and Solvency Assessment and Management in South Africa enables regulators to move in the direction of more principle-based regulation for reducing the effects of the financial crisis. According to Eling and Schmeiser (2010), Solvency II and Solvency Assessment and Management focus on an enterprise-wide risk management (ERM) approach in order to obtain equity capital standards, however, prior literature does not explain how insurance companies actually implement ERM (Atluntas *et al.*, 2011).

In terms of Solvency II and Solvency Assessment and Management, it is compulsory for insurance companies to do an Own Risk and Solvency Assessment+(ORSA) exercise on the assessment of the risks they face, the resources available to meet them and clear communication about how they intend to manage them. The ORSA process demands rigour in areas where risk management is traditionally weak, such as capturing judgement and expertise about things not reflected in historic data. Consequently, the ORSA process will assist insurance companies in developing or strengthening their risk management function (Cantle, 2013).

2.6 CONCLUSION

It was found from the literature study that economic and political forces act as catalysts for changes in regulation. Using the economic force as an example, insurance insolvencies occurred as a result of the market downturn in the second part of the 1980s, the equity market downturn during 2001 and 2003 as well as the recent global financial crisis of 2007 to 2009. These changes in regulation shape the role of risk management in insurance companies.

Even though the South African regulatory architecture weathered the 2007 to 2009 financial crisis, an evaluation on the South African financial regulatory system was conducted for the period 2007 to 2009. This evaluation resulted in the South African financial regulatory and supervisory system to metamorphose from a partially integrated system to the twin peaks model approach.

The Canadian regulator survived the global financial crisis providing lessons learnt and causing regulators worldwide to change their focus towards risk management and the importance of a holistic risk management approach. Lehmann and Hofmann (2010:75) state as follows: %Risk management must go beyond conventional approaches and push the boundaries of our current thinking.+ Different studies have incorporated these lessons learnt analysing specific aspects of the risk management framework.

Locally, the Financial Services Board incorporated these lessons learnt into a robust risk management framework embodied in Solvency Assessment and Management (SAM) that will guide insurance companies to establish their own risk management framework. Although SAM will only commence on 1 January 2016 (Financial Services Board, 2013d), literature has not yet established what impact SAM will have on the role of risk management in an insurance company (Atluntas *et al.*, 2011).

Chapter 3 discusses the research method used to determine the insurers's self-assessed readiness for the Solvency Assessment and Management Pillar II requirements.

CHAPTER 3: RESEARCH METHOD

3.1 INTRODUCTION

In Chapter 2, the evolution of regulation was considered and how regulation shaped the role of risk management in insurance companies. Given the objectives of the study, this chapter contains the research method used to determine which aspects are associated with insurers assessing themselves as ready for the Solvency Assessment and Management requirements using the reported results of the Pillar II Readiness Survey. The research design is first discussed, followed by an explanation of the method used to analyse the individual relationships.

3.2 RESEARCH DESIGN

A quantitative secondary data analysis approach was followed using the data collected by the Financial Services Board on the Pillar II Readiness Survey. The Pillar II Readiness Survey was primarily conducted by the Financial Services Board to get a better understanding of how insurers prepare themselves for the requirements of Pillar II, as well as to determine the insurers' self-assessed readiness for the Solvency Assessment and Management Pillar II requirements (Financial Services Board, 2013c).

3.2.1 Secondary data analysis

Churchill (1999) states that all research should start with secondary data and only when the secondary data shows weakening results, is it feasible to proceed to primary data. Cooper and Schindler (1998) agree that secondary data sources are a useful source for hypotheses testing and to determine further research.

According to Ghauri and Gronhaug (2010), one of the main advantages of using secondary data is that it is time efficient and cost effective. Another advantage is that the quality of the data is reliable since the Financial Services Board is an independent

institution established by statute to oversee the South African Non-Banking Financial Services Industry in the public interest+ (Financial Services Board, 2012). This is supported by the argument by Ghauri and Gronhaug (2010), namely that data collection methods used by experts in governments and semi-government institutions provide reliable data with a high degree of quality.

On the other hand, the limitation of secondary data is that the data may not meet the objective of the study or that the data is not accurate for the intended study. It is therefore important to understand the purpose of the data collection for the source of the secondary data (Cooper & Schindler, 1998; Ghauri & Gronhaug, 2010). However, as mentioned earlier, this is no limitation to the study since the objective of the SAM Pillar II Readiness Survey aligns with the study's research question. The survey research method will be discussed next because the Financial Services Board used a survey to collect the data.

3.2.2 The Survey

The Solvency Assessment and Management Pillar II Readiness Survey was structured as a standardised questionnaire that was available on the Financial Services Board's website and easily accessible to all registered insurers participating in the survey. Insurers were required to complete the standardised survey and have the results signed off by senior management. Once completed, insurers sent an e-mail to the Financial Services Board containing the completed survey both in Microsoft Word and a scanned hard copy showing that the sign-off process had been followed.

Leedy and Ormrod (2013:189) maintain that survey research involves acquiring information about one or more groups of people . perhaps about their characteristics, opinions, attitudes, or previous experiences . by asking them questions and tabulating their answers+. Leedy and Ormrod (2013) continue by mentioning that survey research relies on self-reported data meaning that in the Pillar II Readiness Survey the insurers provided their opinion on the company's readiness for the Solvency Assessment and Management requirements.

Cooper and Schindler (1998) argue that a questionnaire is efficient and economical and if the questionnaire is completed by a skilled and qualified respondent, the desired information can be accurate. This contributes to the accuracy and effectiveness of the Solvency Assessment and Management Pillar II Readiness Survey data as mentioned earlier. According to Kelly, Clark, Brown and Sitzia (2003), the advantage of survey research is that participants responding to questionnaires can be more honest in their responses than they would have been in personal interviews since their responses will not come back to haunt them (Leedy & Ormrod, 2013).

Conversely, Kelly *et al.* (2003) highlight the danger of unintentional narrowed focus when interpreting survey results to the detriment of potentially missing the implications of pertinent issues or problems highlighted by a minority. Furthermore, the survey data collected is restricted to the areas of the topic under investigation and by design guides respondents into a predetermined line of thinking through the set of questions (Kelly *et al.*, 2003).

Specifically focusing on the Pillar II Readiness Survey, the completion by participating insurers required a self-assessment that was subjectively inclined compared with an independent self-assessment. The subjectivity stems from management not wanting to rate themselves poorly as this could be perceived as non-compliance by the Financial Services Board. The subjectivity was countered by the formal sign-off process of the Solvency Assessment and Management Pillar II Readiness Survey by the preparer, the chief executive officer and the non-executive director of the insurance company, thereby contributing to the accuracy and effectiveness of the data (Financial Services Board, 2013c). In addition, the results were made available only in aggregated format to the public, thereby protecting the anonymity of individual replies and preventing potential adverse interpretation of an individual insurer's self-assessment.

Guaranteeing that participants return the questionnaire is also difficult to control and seen as a limitation of a questionnaire (Leedy & Ormrod, 2013). Cooper and Schindler (1998) agree that a major weakness of questionnaires is the skill and enthusiasm of the respondents directly influencing the quality and quantity of the data collected. However, the Solvency Assessment and Management Pillar II Readiness Survey was compulsory for

all registered insurers, thereby countering the major weakness noted by Cooper and Schindler (1998).

The survey research method was also used for prior research when Tillinghast, a risk management consulting firm, surveyed senior insurance industry executives across the globe in 2006, dealing with risk management operations as well as the impact of Solvency II on current risk management practices (Atluntas *et al.*, 2011). Furthermore, Atluntas *et al.* (2011) conducted a comprehensive survey of German property-liability insurers on the enterprise-wide risk management model, while Ashby (2011) used a survey to conduct semi-structured interviews to explore the reasons behind the banking crisis, focusing on the role of risk management and its implementation. Colquitt, Hoyt and Lee (1999) also used a questionnaire to determine who was responsible for the role of risk management in an insurance company.

Cooper and Schindler (1998) argue that using questionnaires as a survey research method has become a universal tool in society today. Ghauri and Gronhaug (2010) agree that surveys through questionnaires are most commonly used in business studies and are one of the most popular data collection methods. Since the survey research method was also used for prior research focusing on risk management, it is evident that the survey research method of a questionnaire was an appropriate method to gather information to assess insurers' readiness for the Solvency Assessment and Management requirements.

The method used to analyse the individual relationships will be discussed next.

3.3 SECONDARY DATA

3.3.1 Research instrument

The Pillar II Readiness Survey was mandatory for all registered insurers resulting in 160 insurers participating in the survey. The questionnaire was structured around Pillar II requirements, with particular emphasis on the elements of the future Solvency Assessment and Management framework.

The descriptive questionnaire was designed to obtain insights into the processes the insurers at that time had in place to achieve the Solvency Assessment and Management objectives and commitments. The questionnaire's objective conforms to the research question of the study and was therefore appropriate to use in assessing the insurers' readiness for the Solvency Assessment and Management requirements. The questionnaire consisted of structured and semi-structured questions. The insurers had to indicate their responses to the structured questions on a %Yes+, %No+, %Partially+ or %Not Applicable+basis by selecting the appropriate response from the drop down box.

The semi-structured questions were predetermined, however, the respondents could have used their own words to answer. After each section, the insurers had to indicate their assessment of their company's current compliance with the Solvency Assessment and Management requirements based on the responses in that applicable section rating themselves as %Weak+, %Needs Improvement+, %Acceptable+ or %Strong+. The questionnaire consisted of seven parts, with Section C focusing on the assessment of risk management and therefore this section was selected for this study (see Appendix A).

The raw data from Section C on risk management from the survey was received from the Financial Services Board. The Financial Services Board modified the primary data by removing the insurers' names to adhere to the confidentiality agreement with the participating insurers. The risk management section consisted of three underlying sections, namely C.1, C.2 and C.3. The responses to the structured questions in Section C.1 (Questions C.1.1 up to C.1.6 and C.1.13) and Section C.2 were received. Questions C.1.7 up to C.1.12 and Section C.3 consisted of semi-structured questions with the Financial Services Board withholding the responses to these specific questions. These responses contained potentially identifying features of the participating insurers or potentially contained confidential or sensitive information. Not having all the answers to the risk management section of the survey could therefore be seen as a limitation of the study.

It is unclear what validity procedures were followed for the SAM Pillar II Readiness Survey, but because the Financial Services Board administered the survey it is assumed that the survey is valid. Furthermore, it is assumed that the data is reliable since the questionnaire needed to be signed off by the preparer, the chief executive officer and the non-executive

director and was submitted to the Financial Services Board. More detail regarding the data collected in the questionnaire will be discussed next.

3.3.2 Data

For the purpose of the analysis, a total of 10 insurance companies, consisting of four life insurers and six non-life insurers, were eliminated due to incomplete data. These 10 eliminated insurers did not provide a self-assessed readiness rating in Section C.2 and could therefore not be used in the analysis.

From the survey data received, the reinsurers' results were eliminated. Reinsurance companies are authorised to underwrite life, non-life or both types of risk ceded from insurers. According to Paragraph 7(a) of Article 13 of the Solvency II Level 1 Text (European Union, 2009), *reinsurance* means 'the activity consisting of accepting risks ceded by an insurance undertaking or third-country insurance undertaking, or by another reinsurance undertaking'. The survey data received classified the six reinsurance responses as 'captive insurers'. These six results were too small to analyse separately and since no information about the reinsurance activity was provided in the survey results, these could not be allocated to either the life or non-life categories. After eliminating the results of the six reinsurance companies, the remaining number of insurance companies forming part of the analysis was 144 insurers, consisting of 68 life insurers and 76 non-life insurers.

The responses to each question in Section C.1 fell into one of three categories, namely 'Yes', 'Partial' and 'No'. Answers shown as 'Not Applicable' were excluded because it could either be that the question had no relevance to the insurer's business model or according to Ghauri and Gronhaug (2010), the respondent avoided answering the question.

In addition, the insurer's self-assessment rating of current compliance with the Solvency Assessment and Management requirements reflected in Section C.2. The self-assessment rating selected by insurers could be 'Strong', 'Acceptable', 'Needs Improvement' and

~~Weak~~. From these, the first two options were grouped into a category ~~Strong and Acceptable~~, and because no insurer assessed themselves as ~~Weak~~, the ~~Needs Improvement~~ responses remained the category of ~~Needs Improvement~~. For the purpose of the quantitative analysis, the category ~~Strong and Acceptable~~ is classified as ~~Ready~~ while the category ~~Needs Improvement~~ is classified as ~~Not Ready~~.

More detail regarding the analysis of the data is discussed next.

3.4 DATA ANALYSIS

The purpose of the data analysis was to identify which aspects of the risk management framework tested in Section C of the Pillar II Readiness Questionnaire were significant predictors of whether an insurance company rated itself as ready for the risk management requirements of Solvency Assessment and Management Pillar II. Each aspect of the risk management framework was considered as a predictor of the insurer's self-assessed readiness rating provided in the survey. The data analysis was conducted with the Statistical Package for the Social Sciences (SPSS). Furthermore, the analysis of the individual relationships was tested with Pearson's chi-squared test and Fisher's exact test. Each statistical analysis technique will be discussed next.

3.4.1 Pearson's chi-squared test

The chi-squared test was developed more than a century ago by Karl Pearson to measure whether a given system of deviations between expected and observed frequency counts is such that it can reasonably be supposed that the deviations have arisen from random sampling (Steyn, 1994:1). The chi-squared test is a popular statistical analysis technique because it provides a measure to determine the goodness of fit between an observed frequency distribution and an expected theoretical distribution (Steyn, 1994). Bain and Engelhardt (1992:462) note that the chi-squared test statistic approximates the chi-squared distribution and has the advantage of being relatively easy to use.

According to Jaccard and Becker (1997), the chi-squared test is normally used when the two categorical variables have been measured on the same individuals or in the case of this analysis, the participating insurers. Therefore, the chi-squared test would typically be used to analyse the relationships between the categorical variables or in the case of this analysis, between the insurers' responses to questions and the self-assessed readiness rating (Jaccard & Becker, 1997).

Pearson's chi-squared test is given by:

$$\chi^2 = \sum_{\text{over } i} \frac{(O_i - E_i)^2}{E_i}$$

where

O_i = observed frequency

E_i = expected frequency

(Jaccard & Becker, 1997)

The assumption underlying the chi-squared test requires observations to be independent from one another. Furthermore, observations are assumed to be from the same population but are obtained through a random sample from the population. Among the requirements for the chi-squared test is that the expected frequencies per cell cannot be zero with the recommended practice to have the expected frequency per cell no lower than approximately five. In addition, the required frequency will decrease if the dimensions of the contingency table increase, also the expected frequencies tend to increase as the size of the overall sample increases (Jaccard & Becker, 1997).

For the majority of responses analysed, the chi-squared test was used while Fisher's exact test was required where the recommended minimum expected frequency count was not met. This test is explained next.

3.4.2 Fisher's exact test

Fisher's exact test is a method to calculate the exact probability of the chi-squared statistic through an analytical procedure. According to Field (2013), Fisher's exact test is accurate for small samples and is generally used on two-by-two tabulated results. As Fisher's exact test provides the exact probability of the chi-squared test statistic, the assumptions underlying the chi-squared test apply equally when using Fisher's exact test (Field, 2013).

Fisher's exact test is only used for the questions where responses had to be combined, since more than 20% of the cells had an expected count of less than five. According to Jaccard and Becker (1997), literature established that since Fisher's test and the chi-squared test deliver the same results as N increases, Fisher's exact test is more desirable when expected frequencies are small.

3.5 LIMITATIONS

The study is limited to the insurance companies registered in South Africa. In addition, due to the confidentiality clause of the Solvency Assessment and Management Pillar II Readiness Survey between the Financial Services Board and the insurers, the Financial Services Board could only provide the responses to the structured questions. Although responses to the semi-structured questions would have provided further insights into the risk management, these responses could have inadvertently identified the individual insurer's identity.

Another limitation to the study is the scale used to grade responses received by the Financial Services Board. Only %Yes+, %No+, %Partial+ and %Not Applicable+ answers were the options made available to respondents. Another possible scale to use in the Solvency Assessment and Management Pillar II Readiness Survey could have been the seven-point Likert scale ranging from 1 = %not relevant+ to 7 = %highly relevant+. Use of a Likert scale would have provided insight into the relativity of responses compared with the %Yes+, %No+ and %Partial+ scale.

3.6 RESEARCH ETHICS

The primary data received from the Financial Services Board was modified by the Financial Services Board to remove any insurer's name. While data was granular at an individual insurer level for those insurance companies that participated in the Pillar II Readiness Survey, specific insurers could not directly be identified from the data provided. Permission was received from the Financial Services Board to access and analyse the data of the Pillar II Readiness Survey for this study. Ethical clearance was obtained from the Faculty Ethics Committee of the University of Pretoria to continue with the study.

3.7 CONCLUSION

The purpose of the study was to determine which aspects of the risk management framework were associated with insurers assessing themselves as ready for the Solvency Assessment and Management Pillar II requirements. The advantages and disadvantages of a quantitative secondary data analysis approach were considered. A quantitative secondary data analysis approach was adopted to analyse the data collected by the Financial Services Board on the Pillar II Readiness Survey. In analysing the data obtained, individual relationships for life and non-life insurers will be tested with Pearson's chi-squared test and Fisher's exact test.

In Chapter 4, the descriptive statistics and analysis of individual relationships are provided.

CHAPTER 4: DATA ANALYSIS

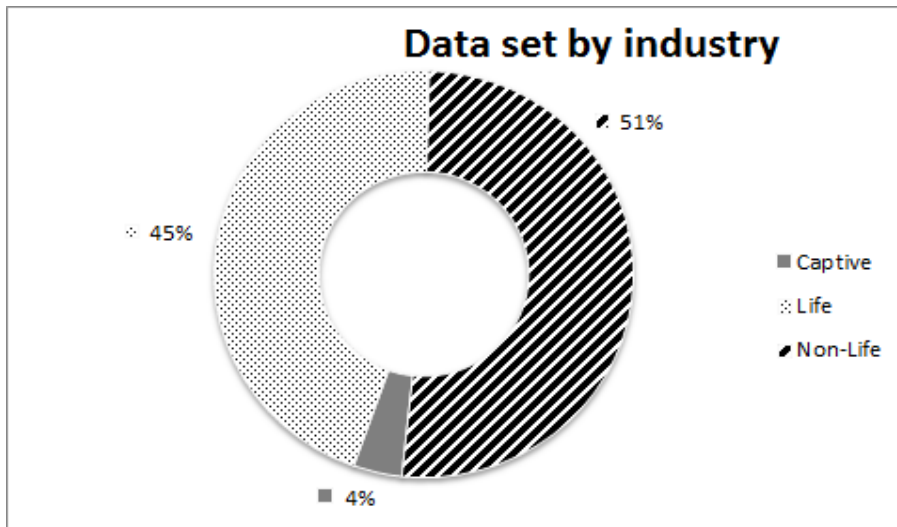
4.1 INTRODUCTION

In Chapter 3, the approach to select a quantitative secondary data analysis method was explained along with the statistical tests that will be used to analyse the individual relationships. In this chapter, the data received from the Financial Services Board is summarised and described before Pearson's chi-squared test and Fisher's exact test are used to analyse insurers' self-assessed readiness for the Solvency Assessment and Management Pillar II risk management requirements.

4.2 DESCRIPTIVE STATISTICS

The data received from the Financial Services Board consisted of the responses from 160 insurers that participated in the Solvency Assessment and Management (SAM) Pillar II Readiness Survey. The participating insurance companies consisted of life insurers, non-life insurers and captive insurance companies as described in Chapter 3. The distribution of the data is illustrated in Figure 6.

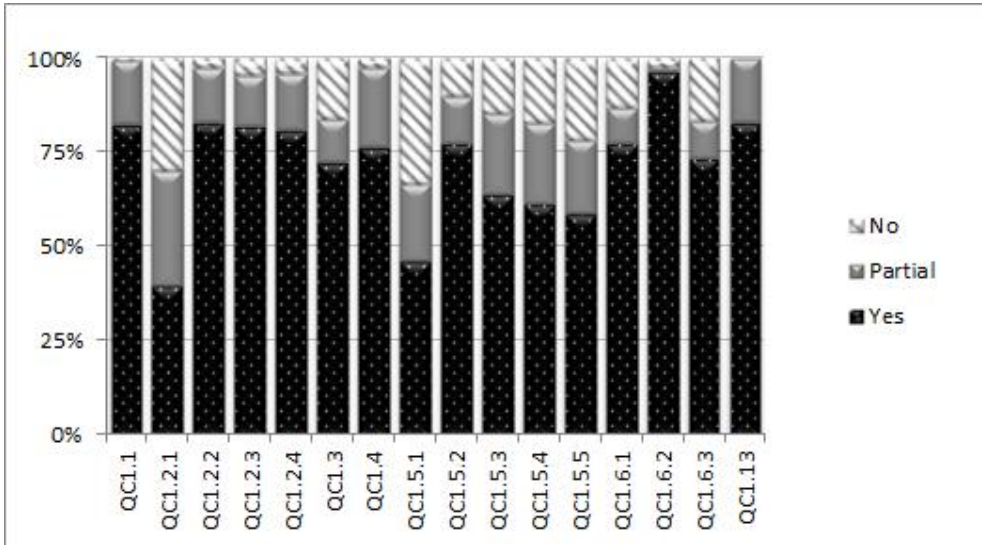
Figure 6: Data set by industry



Source: SAM Pillar II Readiness Survey

As indicated in Figure 7, only the %Yes+, %Partial+ and %No+ responses were considered for the analysis of individual relationships. These responses to the questions are summarised in Figure 7.

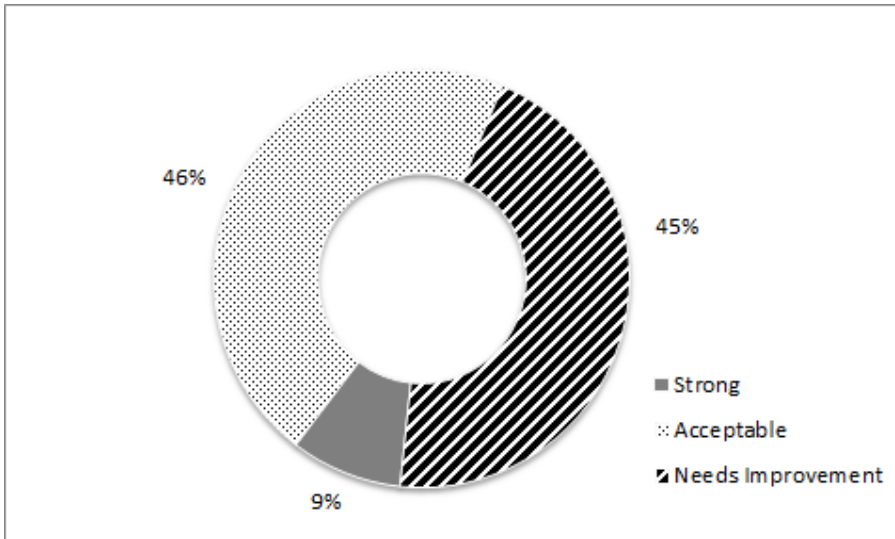
Figure 7: Responses per question



Source: SAM Pillar II Readiness Survey

In terms of the self-assessment of current compliance with the SAM requirements, Section C.2 of the questionnaire consisted of a single question asking each insurer to provide a self-assessment rating of current compliance with the SAM requirements. The insurers overall readiness for the SAM requirements had to be considered before rating themselves as either %Strong+, %Acceptable+, %Needs Improvement+ or %Weak+. As mentioned in Chapter 3, no insurers assessed themselves as %Weak+. Figure 8 illustrates the distribution of the 144 insurers (68 life insurers and 76 non-life insurers) that provided a self-assessed rating.

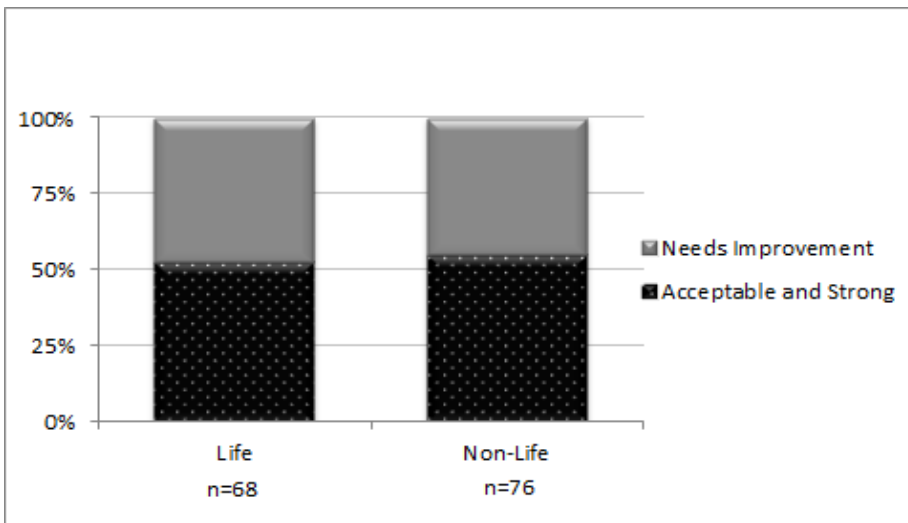
Figure 8: Distribution of overall responses to self-assessment of current compliance



Source: SAM Pillar II Readiness Survey

For the purpose of the study, the responses to the self-assessment were grouped into two categories, namely %Acceptable and Strong+ and %Needs Improvement+. The distribution of the insurers self-assessment rating is illustrated in Figure 9.

Figure 9: Distribution of responses to self-assessment of current compliance between life and non-life insurers



Source: SAM Pillar II Readiness Survey

Results from the analysis of the individual relationships between responses in the survey and the self-assessed rating are discussed in the following section.

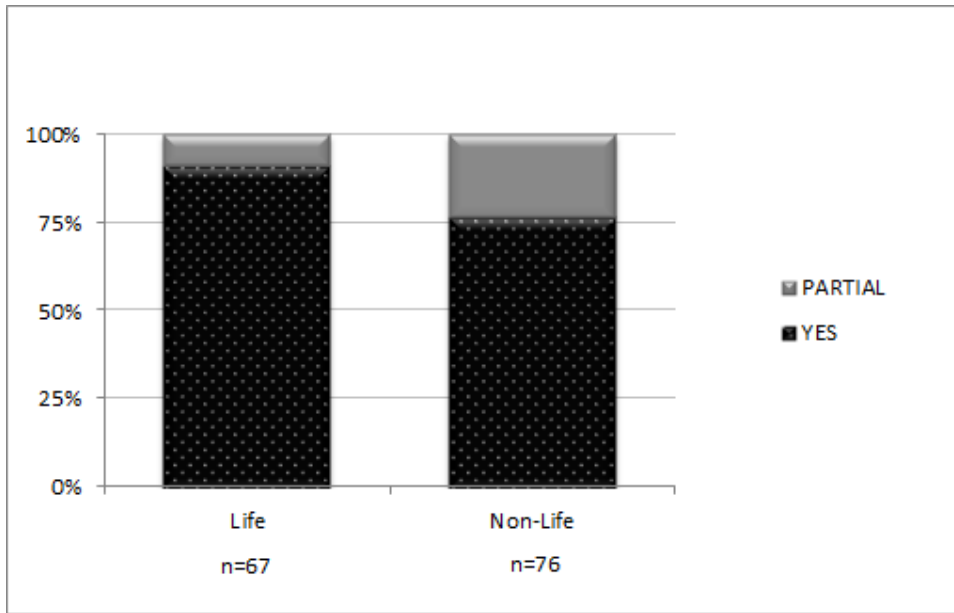
4.3 ANALYSIS OF INDIVIDUAL RELATIONSHIPS

The relationship between the questions in the Pillar II Readiness questionnaire (predictors) and the insurers' self-assessed 'current' compliance with the Solvency Assessment and Management (SAM) requirements (outcome) was tested using Pearson's chi-squared test and Fisher's exact test. In the following section, the analysis is considered for each question individually.

4.3.1 Implementation of risk management systems

The question was whether a company at that time had a risk management system in place. If the insurer responded 'Yes' to the question, then the questions regarding the documentation of risk management strategy and the external review of the risk management system were required to be answered. If insurers responded 'No', they had to proceed to the question regarding the existence of risk management policies. Figure 10 illustrates the distribution of responses to the question of whether the insurer 'currently' had a risk management system in place.

Figure 10: Distribution of responses to implementation of risk management system



Source: SAM Pillar II Readiness Survey

Hypothesis testing

H_0 = There is no relationship between an insurer currently having a risk management system in place and the insurer's self-assessment of current compliance with the SAM requirements.

H_1 = There is a relationship between an insurer currently having a risk management system in place and the insurer's self-assessment as ready to comply with the SAM requirements.

The results of the chi-squared tests are summarised in Table 1 reflecting the analysis for the life and non-life insurers separately.

Table 1: Pearson's chi-squared test table on implementation of risk management systems

	Life	Non-life
Risk management system	$\chi^2 (1) = 1.10$ $p = 0.294$	$\chi^2 (1) = 10.42,$ $p = 0.001$

Source: SPSS output

In terms of Pearson's chi-squared test for **life insurers** ($\chi^2 (1) = 1.10, p = 0.294$), there is insufficient evidence to reject the null hypothesis based on the responses provided. The results indicate that there is no significant relationship at the 95% confidence level between life insurers having a risk management system in place and assessing themselves as ready for the SAM requirements. However, it should be noted that 91% of the life insurers had implemented risk management systems and therefore the concentrated responses in the %Yes+category limit the statistical relationship testing across all categories.

The results of the chi-squared test for the analysis of **non-life** insurers indicate that the null hypothesis should be rejected as shown by the test statistic and p value of $\chi^2 (1) = 10.42, p = 0.001$ respectively. Table 2 summarises the cross tabulation of responses for non-life insurers having a risk management system in place and non-life insurers self-assessment of readiness.

Table 2: Cross tabulation analysis of implementation of risk management systems for non-life insurers

		Self-assessment		Total
		Not ready	Ready	
Risk management system	Partial			
	Count	14.0	4.0	18.0
	Expected Count	8.1	9.9	18.0
	% within C.1.1	77.8%	22.2%	100.0%
	Yes			
	Count	20.0	38.0	58.0
Expected Count	25.9	32.1	58.0	
% within C.1.1	34.5%	65.5%	100.0%	
Total				
Count	34.0	42.0	76.0	
Expected Count	34.0	42.0	76.0	
% within C.1.1	44.7%	55.3%	100.0%	

Source: SPSS output

As indicated in Table 2, the non-life insurers responded only with %Yes+or %Partial+with no %No+ responses to having a risk management system in place. However, of the non-life insurers who responded with %Partial+, 77.8% assessed themselves as not ready, which is more than expected. Furthermore, of the non-life insurers who responded with %Yes+, 65.5% assessed themselves as ready, which is more than expected.

Therefore, the results indicate that non-life insurers who had a risk management system in place were more likely to assess themselves as being ready for the SAM requirements compared with those who had a partial risk management system in place.

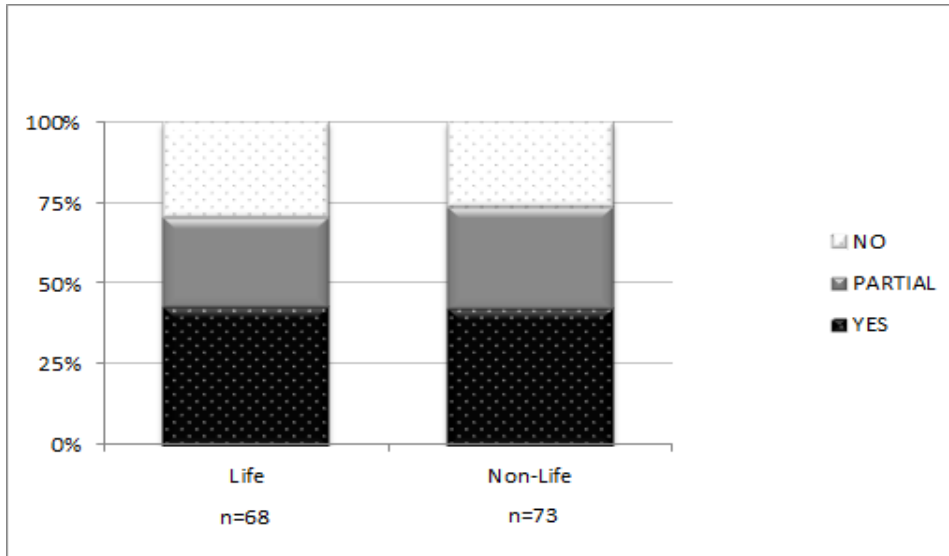
4.3.2 Documentation of risk management strategy

The purpose of this section of the questionnaire was to determine whether the insurer's risk management system documented the risk management strategy. The documentation of risk management strategy section consisted of four different underlying questions and each question will be discussed separately.

4.3.2.1 Actuarial assumption setting principles and process

In terms of the documentation of the insurer's risk management strategy, this question focused on documented risk management principles and a documented risk management approach to actuarial assumption setting. Figure 11 illustrates the distribution of the responses to this question.

Figure 11: Distribution of responses to actuarial assumption setting



Source: SAM Pillar II Readiness Survey

Hypothesis testing

H_0 = There is no relationship between an insurer who documents the actuarial assumption setting principles and process and the insurer's self-assessment of current compliance with the SAM requirements.

H_1 = There is a relationship between an insurer who documents the actuarial assumption setting principles and process and the insurer's self-assessment as ready to comply with the SAM requirements.

The results of the chi-squared tests are summarised in Table 3 reflecting the analysis for the life and non-life analysis separately.

Table 3: Pearson's chi-squared test on actuarial assumption setting

	Life	Non-life
Actuarial assumption setting	$\chi^2 (2) = 4.96,$ $p = 0.084$	$\chi^2 (2) = 7.16,$ $p = 0.028$

Source: SPSS output

In terms of Pearson's chi-squared test for **life insurers** ($\chi^2 (2) = 4.96, p = 0.084$), there is insufficient evidence to reject the null hypothesis based on the responses provided. The results indicate that there is no significant relationship at the 95% confidence level between life insurers whose risk management strategy documented the actuarial assumption setting principles and process and assessing themselves as ready for the SAM requirements. Although the study used a 95% confidence level, this result would have been significant at the 90% confidence level.

The results of the chi-squared test for the analysis of the **non-life insurers** indicate that the null hypothesis should be rejected as shown by the test statistic and p value of $\chi^2 (2) = 7.16, p = 0.028$ respectively. Table 4 summarises the cross tabulation of an insurer documenting the actuarial assumption setting principles and process and the insurer's self-assessment of readiness.

Table 4: Cross tabulation analysis of actuarial assumption setting for non-life insurers

		Self-assessment		Total
		Not ready	Ready	
Actuarial assumption setting	No			
	Count	13.0	7.0	20.0
	Expected Count	8.9	11.1	20.0
	% within C.1.2.1	65.0%	35.0%	100.0%
	Partial			
	Count	12.0	12.0	24.0
	Expected Count	10.7	13.3	24.0
	% within C.1.2.1	50.0%	50.0%	100.0%
	Yes			
Count	9.0	23.0	32.0	
Expected Count	14.3	17.7	32.0	
% within C.1.2.1	28.1%	71.9%	100.0%	
Total				
Count	34.0	42.0	76.0	
Expected Count	34.0	42.0	76.0	
% within C.1.2.1	44.7%	55.3%	100.0%	

Source: SPSS output

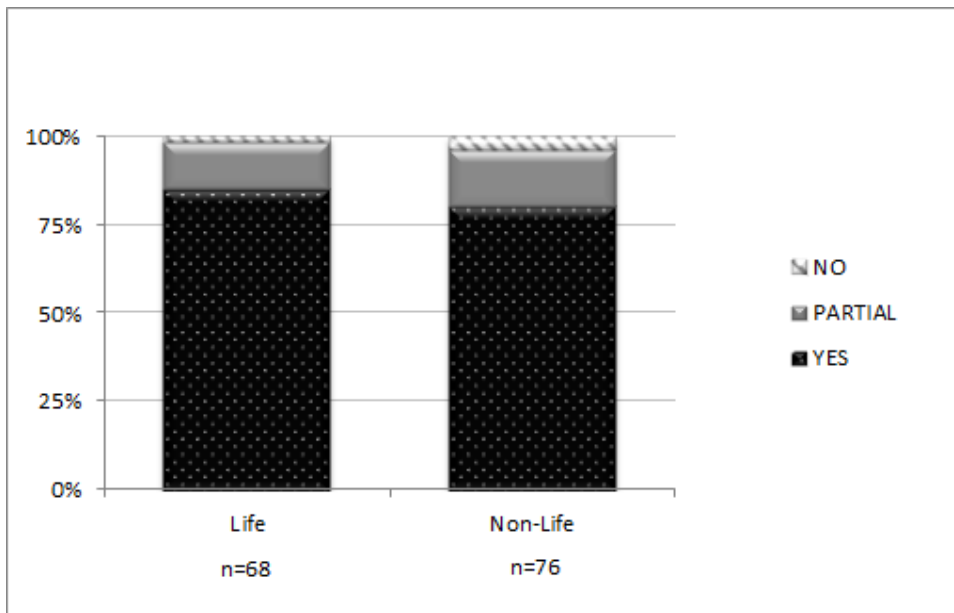
Of the non-life insurers who responded with **No**, 65% assessed themselves as not ready, which is more than expected. Furthermore, of the non-life insurers who responded with **Yes**, 71.9% assessed themselves as ready, which is more than expected.

Therefore, the results indicate that the non-life insurers who documented the actuarial assumption setting principles and process were more likely to assess themselves as being ready for the SAM requirements compared with those who did not document the approach to actuarial assumption setting.

4.3.2.2 Assigned risk management responsibilities

In terms of the documentation of the insurer's risk management strategy, this question focused on the documentation of assigned risk management responsibilities across all activities of the insurer. Figure 12 shows the distribution of responses to this question.

Figure 12: Distribution of responses to assigned risk management responsibilities



Source: SAM Pillar II Readiness Survey

Hypothesis testing

H_0 = There is no relationship between the insurer's risk management strategy assigning risk management responsibilities across all activities of the company and the insurer's self-assessment of current compliance with the SAM requirements.

H_1 = There is a relationship between an insurer whose risk management strategy assigns risk management responsibilities across all activities of the company and the insurer's self-assessment as ready to comply with the SAM requirements.

For the purpose of analysing the life and non-life insurers' results, the 'No' and 'Partial' responses were combined, since more than 20% of the cells had an expected count of less than five. However, after combining the life insurers' 'No' and 'Partial' responses, the minimum expected count was 4.71. This resulted in using Fisher's exact test to analyse the life insurers' results. For the non-life insurers, the minimum cell count for applying the chi-squared test was met after combining the responses and therefore it was used to analyse the non-life insurers' results.

The results of Fisher's exact test and the chi-squared test are summarised in Table 5 reflecting the analysis for the life and non-life insurers separately.

Table 5: Statistical tests on assigned risk management responsibilities

	Life	Non-life
Assigned responsibilities	Fisher's exact test $p < 0.001$	$\chi^2 (1) = 17.852,$ $p < 0.001$

Source: SPSS output

For **life insurers**, the null hypothesis can be rejected based on Fisher's exact test, since $p < 0.001$. The results indicate that there are significant differences between life insurers' responses and their self-assessment of readiness for the SAM requirements. This is supported by the data reflected in Table 6.

Table 6: Cross tabulation analysis of assigned risk management responsibilities for life insurers

		Self-assessment		Total
		Not ready	Ready	
Assigned responsibilities	No or partial			
	Count	10.0	0	10.0
	Expected Count	4.7	5.3	10.0
	% within C.1.2.2	100.0%	0.0%	100.0%
	Yes			
	Count	22.0	36.0	58.0
	Expected Count	27.3	30.7	58.0
	% within C.1.2.2	37.9%	62.1%	100.0%
	Total			
Count	32.0	36.0	68.0	
Expected Count	32.0	36.0	68.0	
% within C.1.2.2	47.1%	52.9%	100.0%	

Source: SPSS output

Of the life insurers who responded with **No or Partial**, 100% assessed themselves as not ready, which is more than expected. Additionally, of those life insurers who responded with **Yes**, 62.1% assessed themselves as ready, which is more than expected.

Therefore, the results indicate that the life insurers who assigned risk management responsibilities across all activities of the company were more likely to assess themselves as being ready for the SAM requirements compared with those that did not or partially assigned responsibilities.

The results of the chi-squared test for the analysis of the **non-life insurers** indicate that the null hypothesis should be rejected as shown by the test statistic and p value of $\chi^2(1) = 17.852$, $p < 0.001$ respectively. Table 7 summarises the cross tabulation of responses to assigned risk management responsibilities and the insurers' self-assessment of readiness.

Table 7: Cross tabulation analysis of assigned risk management responsibilities for non-life insurers

		Self-assessment		Total
		Not ready	Ready	
Assigned responsibilities	No or partial			
	Count	14.0	1.0	15.0
	Expected Count	6.7	8.3	15.0
	% within C.1.2.2	93.3%	6.7%	100.0%
	Yes			
	Count	20.0	41.0	61.0
	Expected Count	27.3	33.7	61.0
	% within C.1.2.2	32.8%	67.2%	100.0%
	Total			
Count	34.0	42.0	76.0	
Expected Count	34.0	42.0	76.0	
% within C.1.2.2	44.7%	55.3%	100.0%	

Source: SPSS output

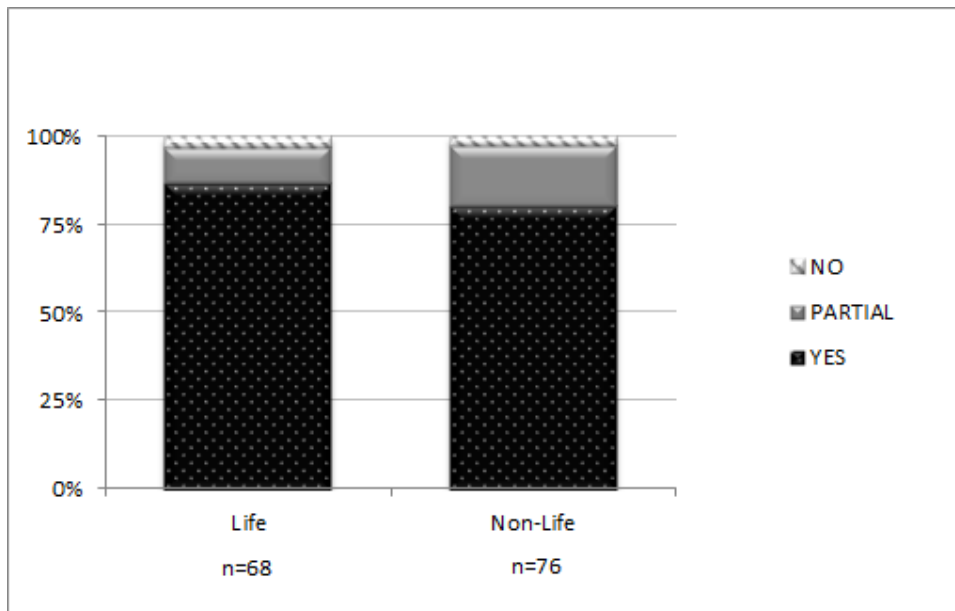
As indicated in Table 7, of the non-life insurers who responded with **No** or **Partial**, 93.3% assessed themselves as not ready, which is more than expected. Furthermore, 67.2% of the non-life insurers who responded with **Yes** assessed themselves as ready, which is more than expected.

Therefore, the results indicate that the non-life insurers who assigned risk management responsibilities across all activities of the company were more likely to assess themselves as being ready for the SAM requirements compared with those that did not or partially assigned responsibilities.

4.3.2.3 Documented processes and procedures on material risks

In terms of the documentation of the insurer's risk management strategy, the question was whether the processes and procedures for identifying, measuring, monitoring, managing and reporting on material risks were specified in the risk management strategy. Figure 13 illustrates the responses to this question.

Figure 13: Distribution of responses to documented processes and procedures on material risks



Source: SAM Pillar II Readiness Survey

Hypothesis testing

H_0 = There is no relationship between an insurer who documents the processes and procedures on material risks and the insurer's self-assessment of current compliance with the SAM requirements.

H_1 = There is a relationship between an insurer who documents the processes and procedures on material risks and the insurer's self-assessment as ready to comply with the SAM requirements.

For the purpose of analysing the life and non-life insurers' results, the 'No' and 'Partial' responses were combined since more than 20% of the cells had an expected count of less than five. However, after the life insurers' 'No' and 'Partial' responses were combined, the minimum expected count was 4.24 requiring the use of Fisher's exact test to analyse the life insurers' results. For the non-life insurers, the minimum cell count for applying the chi-squared test was met after combining the responses and therefore it was used to analyse the non-life results. The results of Fisher's exact test and the chi-squared test are summarised in Table 8 reflecting the analysis for the life and non-life insurers separately.

Table 8: Statistical tests on documented processes and procedures

	Life	Non-life
Documented processes and procedures	Fisher's exact test $p = 0.010$	$\chi^2 (1) = 13.29,$ $p < 0.001$

Source: SPSS output

For **life insurers**, the null hypothesis can be rejected based on Fisher's exact test, since $p = 0.010$. The results indicate significant differences between the life insurers' responses and their self-assessed readiness as indicated in Table 9. Table 9 summarises the cross tabulation of responses to documented processes and procedures and the insurers' self-assessment of readiness.

Table 9: Cross tabulation analysis of documented processes and procedures on material risks for life insurers

		Self-assessment		Total
		Not ready	Ready	
Documented processes and procedures	No or partial			
	Count	8.0	1.0	9.0
	Expected Count	4.2	4.8	9.0
	% within C.1.2.3	88.9%	11.1%	100.0%
	Yes			
	Count	24.0	35.0	59.0
	Expected Count	27.8	31.2	59.0
	% within C.1.2.3	40.7%	59.3%	100.0%
	Total			
Count	32.0	36.0	68.0	
Expected Count	32.0	36.0	68.0	
% within C.1.2.3	47.1%	52.9%	100.0%	

Source: SPSS output

Table 9 shows that of the life insurers who responded with **No** or **Partial**, 88.9% assessed themselves as not ready, which is more than expected. In addition, 59.3% of the life insurers who responded with **Yes** assessed themselves as ready and that is more than expected.

Therefore, the results indicate that the life insurers who documented the processes and procedures on material risks were more likely to assess themselves as being ready for the SAM requirements compared with those that did not or partially documented the processes and procedures.

The results of the chi-squared test for the analysis of the **non-life insurers** indicate that the null hypothesis should be rejected as shown by the test statistic and p value of $\chi^2(1) =$

13.29, $p < 0.001$ respectively. Table 10 summarises the cross tabulation of documented processes and procedures and the insurers self-assessment of readiness.

Table 10: Cross tabulation analysis of documented processes and procedures on material risks for non-life insurers

		Self-assessment		Total
		Not ready	Ready	
Documented processes and procedures	No or partial			
	Count	13.0	2.0	15.0
	Expected Count	6.7	8.3	15.0
	% within C.1.2.3	86.7%	13.3%	100.0%
	Yes			
	Count	21.0	40.0	61.0
	Expected Count	27.3	33.7	61.0
	% within C.1.2.3	34.4%	65.6%	100.0%
	Total			
Count	34.0	42.0	76.0	
Expected Count	34.0	42.0	76.0	
% within C.1.2.3	44.7%	55.3%	100.0%	

Source: SPSS output

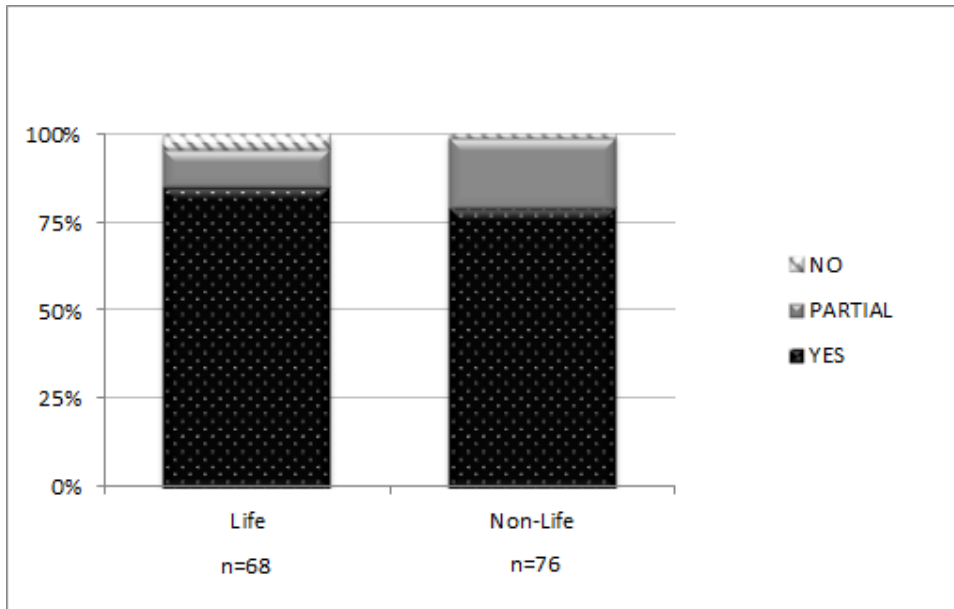
Of the non-life insurers who responded with **No** or **Partial**, 86.7% assessed themselves as not ready, which is more than expected. In addition, 65.6% of the non-life insurers who responded with **Yes** assessed themselves as ready, which is more than expected.

Therefore, the results indicate that non-life insurers who documented the processes and procedures on material risks were more likely to assess themselves as being ready for the SAM requirements than those that did not or partially documented the processes and procedures.

4.3.2.4 Specified reports on material risks

In terms of the documentation of the insurer's risk management strategy, the focus was to establish whether the risk management system documented reports to inform senior management and the board of material risks in the company. Figure 14 illustrates the distribution of the responses to this question.

Figure 14: Distribution of responses to specified reports on material risks



Source: SAM Pillar II Readiness Survey

Hypothesis testing

H_0 = There is no relationship between the insurer specifying reports to inform senior management and the board of material risks and the insurer's self-assessment of current compliance with the SAM requirements.

H_1 = There is a relationship between the insurer specifying reports to inform senior management and the board of material risks and the insurer's self-assessment as ready to comply with the SAM requirements.

For the purpose of analysing the life and non-life insurers' results, the 'No' and 'Partial' responses were combined since more than 20% of the cells had an expected count of less than five. However, after the life insurers' 'No' and 'Partial' responses were combined, the minimum expected count was 4.71. This resulted in using Fisher's exact test to analyse the life insurers' results. For the non-life insurers, the minimum cell count for applying the chi-squared test was met after combining the responses and therefore it was used to analyse the non-life insurers' results.

The results of Fisher's exact test and the chi-squared test are summarised in Table 11 reflecting the analysis for the life and non-life insurers separately.

Table 11: Statistical tests on specified reports on material risks

	Life	Non-life
Specified reports	Fisher's exact test $p = 0.005$	$\chi^2 (1) = 10.93,$ $p = 0.001$

Source: SPSS output

For the **life analysis**, the null hypothesis should be rejected based on Fisher's exact test, since $p = 0.005$. The results indicate significant differences between the life insurers' responses and their self-assessed readiness as indicated in Table 12. Table 12 summarises the cross tabulation of responses to specified reports on material risks and the insurers' self-assessment of readiness.

Table 12: Cross tabulation analysis of specified reports on material risks for life insurers

		Self-assessment		Total
		Not ready	Ready	
Specified reports	No or partial			
	Count	9.0	1.0	10.0
	Expected Count	4.7	5.3	10.0
	% within C.1.2.4	90.0%	10.0%	100.0%
	Yes			
	Count	23.0	35.0	58.0
	Expected Count	27.3	30.7	58.0
	% within C.1.2.4	39.7%	60.3%	100.0%
	Total			
Count	32.0	36.0	68.0	
Expected Count	32.0	36.0	68.0	
% within C.1.2.4	47.1%	52.9%	100.0%	

Source: SPSS output

Of the life insurers that responded with **No or partial**, 90% assessed themselves as not ready, which is more than expected. Furthermore, 60.3% of the life insurers who responded with **Yes** assessed themselves as ready and that is more than expected.

Therefore, the results indicate that the life insurers who specified reports to inform senior management and the board of material risks were more likely to assess themselves as being ready for the SAM requirements than those who did not or partially had specified reports in place.

The results of the chi-squared test for the analysis of **non-life insurers** indicate that the null hypothesis should be rejected as shown by the test statistic and p value of $\chi^2(1) = 10.93$, $p = 0.001$ respectively. Table 13 summarises the cross tabulation of responses to specified reports on material risks and the insurers' self-assessment of readiness.

Table 13: Cross tabulation analysis of specified reports on material risks for non-life insurers

		Self-assessment		Total
		Not ready	Ready	
Specified reports	No or partial			
	Count	13.0	3.0	16.0
	Expected Count	7.2	8.8	16.0
	% within C.1.2.4	81.3%	18.8%	100.0%
	Yes			
	Count	21.0	39.0	60.0
	Expected Count	26.8	33.2	60.0
	% within C.1.2.4	35.0%	65.0%	100.0%
	Total			
Count	34.0	42.0	76.0	
Expected Count	34.0	42.0	76.0	
% within C.1.2.4	44.7%	55.3%	100.0%	

Source: SPSS output

Of the non-life insurers who responded with **No or partial**, 81.3% assessed themselves as not ready, which is more than expected. Furthermore, 65% of the non-life insurers who responded with **Yes** assessed themselves as ready, which is more than expected.

Therefore, the results indicate that the non-life insurers who specified reports to inform senior management and the board of material risks were more likely to assess themselves as ready for the SAM requirements than those who did not or partially had specified reports in place.

4.3.2.5 Summary of section on documentation of risk management strategy

The results indicate that **life** insurers with a risk management strategy that assigned risk management responsibilities, documented the processes and procedures on material risks

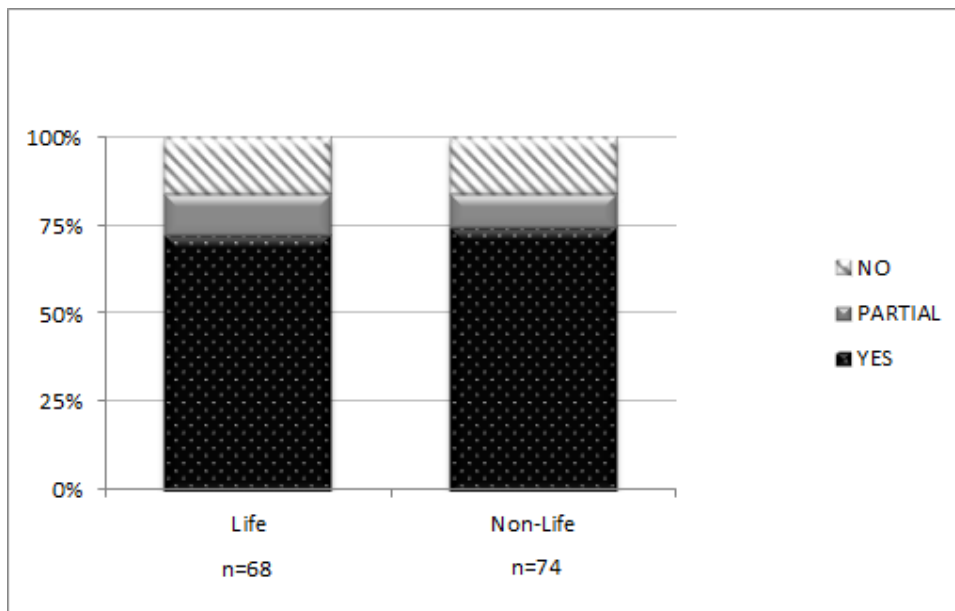
and specified reports on material risks were more likely to assess themselves as ready for the SAM requirements than those who did not or partially had these in place.

For **non-life** insurers, the results indicate that when the risk management strategy documented the actuarial assumption setting principle and process, assigned risk management responsibilities, documented the processes and procedures on material risks and specified reports on material risks, the non-life insurers were more likely to assess themselves as ready for the SAM requirements than those who did not or partially had these in place.

4.3.3 External review of risk management system

The purpose of this question was to determine whether the insurers' risk management system was reviewed regularly by the internal audit function or an objective external reviewer. Figure 15 illustrates the distribution of responses to this question.

Figure 15: Distribution of responses to external review of risk management system



Source: SAM Pillar II Readiness Survey

Hypothesis testing

H_0 = The external review of the insurers' risk management system has no relationship with the insurers' self-assessment of current compliance with the SAM requirements.

H_1 = There is a relationship between having an external review of an insurer's risk management system and the insurer's self-assessment as ready to comply with the SAM requirements.

For the purpose of analysing the life and non-life insurers' results, the 'No' and 'Partial' responses were combined since more than 20% of the cells had an expected count of less than five. Following the combining of categories, the chi-squared test assumptions were met and therefore it was used for the life and non-life insurers' analysis as summarised in Table 14.

Table 14: Pearson's chi-squared test on external review of risk management system

	Life	Non-life
External review	$\chi^2 (1) = 2.74,$ $p = 0.098$	$\chi^2 (1) = 1.83,$ $p = 0.176$

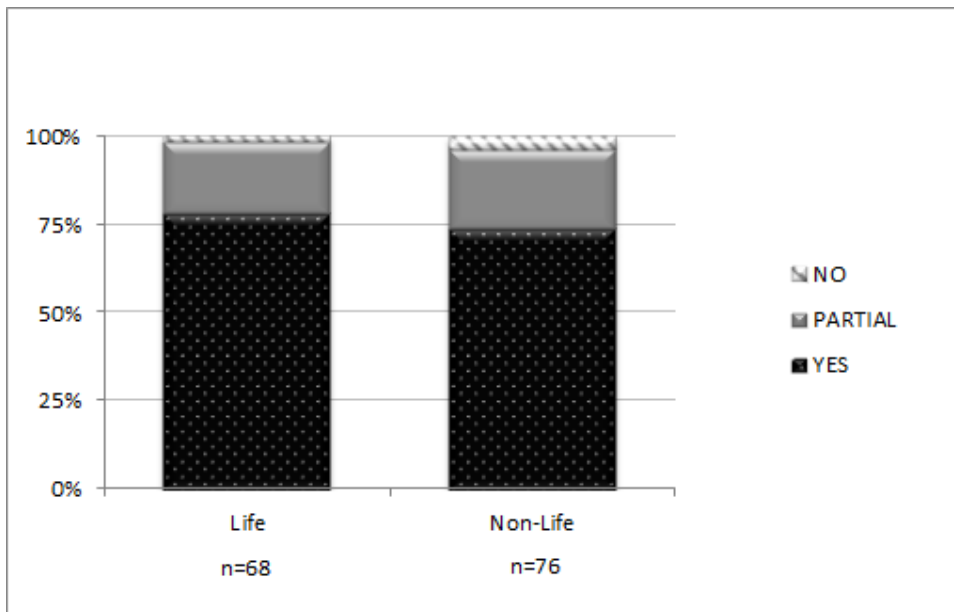
Source: SPSS output

In terms of Pearson's chi-squared test for **life insurers** ($\chi^2 (1) = 2.74, p = 0.098$) and **non-life insurers** ($\chi^2 (1) = 1.83, p = 0.176$), there is insufficient evidence to reject the null hypotheses based on the responses provided. The results indicate that there is no significant relationship at the 95% confidence level between whether the insurer's risk management system was being externally reviewed and the insurer's self-assessment as ready for the SAM requirements. Although this study used a 95% confidence level, this result would have been significant at the 90% confidence level.

4.3.4 Existence of risk management policies

The question was asked to establish whether the insurer had risk management policies in place. If the insurer responded "Yes" to this question, then the question regarding types of risk management policies should have been answered and if the insurer responded "No", he or she should have proceeded to the question regarding the features of remuneration policy. Figure 16 illustrates the distribution of responses to this question.

Figure 16: Distribution of responses to existence of risk management policies



Source: SAM Pillar II Readiness Survey

Hypothesis testing

H_0 = There is no relationship between the insurer having risk management policies in place and the insurer's self-assessment of current compliance with the SAM requirements.

H_1 = There is a relationship between the insurer having risk management policies in place and the insurer's self-assessment as ready to comply with the SAM requirements.

For the purpose of analysing the life and non-life insurers results, the No+ and Partial+ responses were combined since more than 20% of the cells had an expected count of less than five. After combining the responses, the minimum cell count for applying the chi-squared test was met and therefore it was used for the life and non-life analyses as summarised in Table 15.

Table 15: Pearson's chi-squared test on risk management policies

	Life	Non-life
Risk management policies	$\chi^2 (1) = 8.38,$ $p = 0.004$	$\chi^2 (1) = 1.16,$ $p = 0.282$

Source: SPSS output

The results of the chi-squared test for the analysis of the **life insurers** indicate that the null hypothesis should be rejected as shown by the test statistic and p value of $\chi^2 (1) = 8.38$, $p = 0.004$ respectively. Table 16 summarises the cross tabulation of responses for risk management policies and the insurers self-assessment of readiness.

Table 16: Cross tabulation analysis of risk management policies for life insurers

		Self-assessment		Total
		Not ready	Ready	
Risk management policies	No or partial			
	Count	12.0	3.0	15.0
	Expected Count	7.1	7.9	15.0
	% within C.1.4	80.0%	20.0%	100.0%
	Yes			
	Count	20.0	33.0	53.0
	Expected Count	24.9	28.1	53.0
	% within C.1.4	37.7%	62.3%	100.0%
	Total			
Count	32.0	36.0	68.0	
Expected Count	32.0	36.0	68.0	
% within C.1.4	47.1%	52.9%	100.0%	

Source: SPSS output

Table 16 indicates that 80% of the life insurers who responded with **No** and **Partial** assessed themselves as not ready, which is more than expected. Furthermore, for those life insurers responding with **Yes**, 62.3% assessed themselves as ready, which is more than expected.

Therefore, the results indicate that the life insurers who had risk management policies in place were more likely to assess themselves as being ready for the SAM requirements than those who did not or partially had risk management policies in place.

In terms of Pearson's chi-squared test for **non-life insurers** ($\chi^2(1) = 1.16, p = 0.282$), there is insufficient evidence to reject the null hypothesis based on the responses provided. The results indicate that there is no significant relationship at the 95%

confidence level between non-life insurers having risk management policies in place and assessing themselves as ready for the SAM requirements.

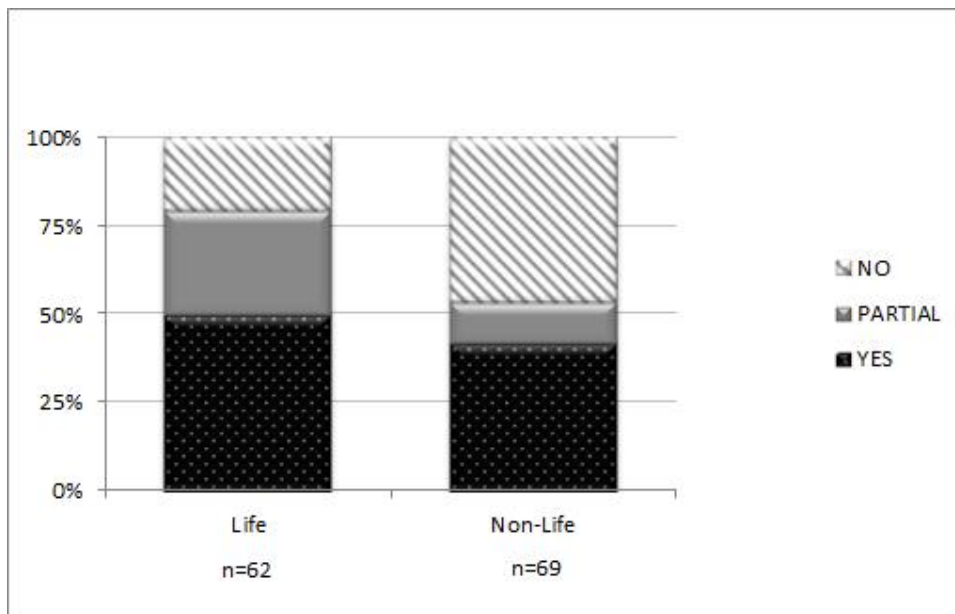
4.3.5 Types of risk management policies

The purpose of Section C.1.5 of the questionnaire was to evaluate the policies forming part of the insurers' existing risk management policies. This section of the questionnaire consisted of five underlying questions and each question will be discussed separately.

4.3.5.1 Asset-liability management policy

The question was whether the risk management policy included an explicit asset-liability management (ALM) policy. Figure 17 illustrates the distribution of responses to this question.

Figure 17: Distribution of responses to ALM policy



Source: SAM Pillar II Readiness Survey

Hypothesis testing

H_0 = There is no relationship between the insurer having an explicit ALM policy in place and the insurer's self-assessment of current compliance with the SAM requirements.

H_1 = There is a relationship between the insurer having an explicit ALM policy in place and the insurer's self-assessment as ready to comply with the SAM requirements.

The results of the chi-squared tests are summarised in Table 17 reflecting the analysis of the life and non-life insurers separately.

Table 17: Pearson's chi-squared test on explicit ALM policy

	Life	Non-life
ALM policy	$\chi^2 (2) = 9.54,$ $p = 0.008$	$\chi^2 (1) = 5.65,$ $p = 0.017$

Source: SPSS output

The results of the chi-squared test for the analysis of **life insurers** indicate that the null hypothesis should be rejected as shown by the test statistic and p value of $\chi^2 (2) = 9.54,$ $p = 0.008$ respectively. Table 18 summarises the cross tabulation of responses to ALM policy and the insurer's self-assessment of readiness.

Table 18: Cross tabulation analysis of explicit ALM policy for life insurers

		Self-assessment		Total
		Not ready	Ready	
ALM policy	No			
	Count	7.0	6.0	13.0
	Expected Count	6.5	6.5	13.0
	% within C.1.5.1	53.8%	46.2%	100.0%
	Partial			
	Count	14.0	4.0	18.0
	Expected Count	9.0	9.0	18.0
	% within C.1.5.1	77.8%	22.3%	100%
	Yes			
Count	10.0	21.0	31.0	
Expected Count	15.5	15.5	31.0	
% within C.1.5.1	32.3%	67.7%	100.0%	
Total				
Count	31.0	31.0	62.0	
Expected Count	31.0	31.0	62.0	
% within C.1.5.1	50.0%	50.0%	100.0%	

Source: SPSS output

For the life insurers who responded with **Partial**, 77.8% assessed themselves as not ready, while the 67.7% who responded with **Yes** assessed themselves as ready. In both above-mentioned groups, the responses were more than expected. However, there is no significant difference between the life insurers who responded with **No** and whether they assessed themselves as ready or not ready.

Therefore, the results indicate that the life insurers who had an explicit ALM policy in place were more likely to assess themselves as ready for the SAM requirements than those who partially had it in place.

The results of the chi-squared test for the analysis of **non-life insurers** indicate that the null hypothesis should be rejected as shown by the test statistic and p value of $\chi^2(1) = 5.65$, $p = 0.017$ respectively. Table 19 summarises the cross tabulation of responses to an explicit ALM policy and the insurers' self-assessment of readiness.

Table 19: Cross tabulation analysis of explicit ALM policy for non-life insurers

		Self-assessment		Total
		Not ready	Ready	
ALM policy	No or partial			
	Count	24.0	16.0	40.0
	Expected Count	19.1	20.9	40.0
	% within C.1.5.1	60.0%	40.0%	100.0%
	Yes			
	Count	9.0	20.0	29.0
	Expected Count	13.9	15.1	29.0
	% within C.1.5.1	31.0%	69.0%	100.0%
	Total			
Count	33.0	36.0	69.0	
Expected Count	33.0	36.0	69.0	
% within C.1.5.1	47.8%	52.2%	100.0%	

Source: SPSS output

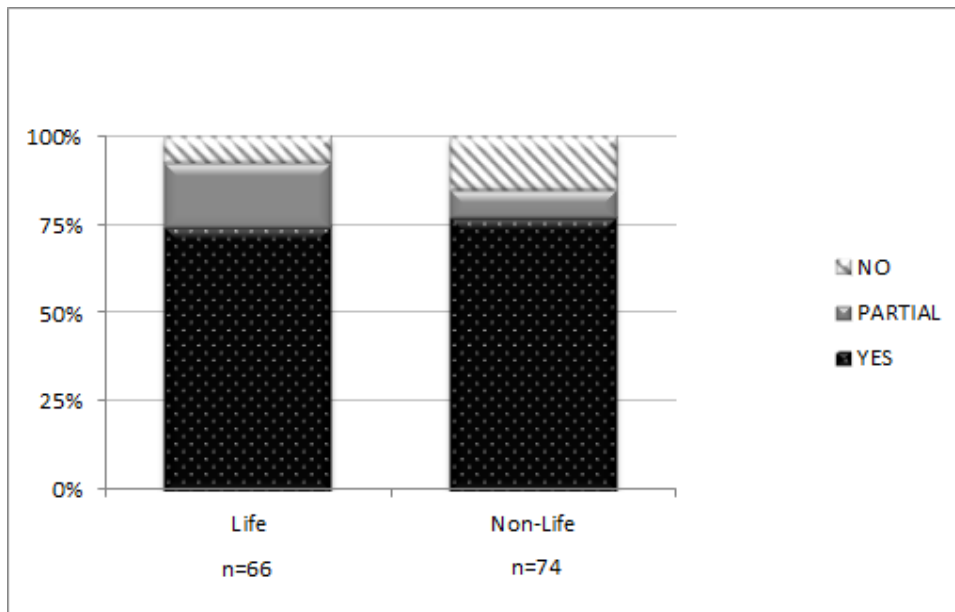
For the purpose of analysing the non-life insurers' results, the **No** and **Partial** responses were combined since more than 20% of the cells had an expected count of less than five. For the non-life insurers that responded with **No** or **Partial**, 60% assessed themselves as not ready, which is more than expected. Furthermore, 69% of the life insurers who responded with **Yes** assessed themselves as ready and that is more than expected.

Therefore, the results indicate that the non-life insurers who had an explicit ALM policy in place were more likely to assess themselves as ready for the SAM requirements than those who did not or partially had it in place.

4.3.5.2 Investment policy

The focus was on whether the risk management policy included an explicit investment policy. Figure 18 illustrates the distribution of the responses to this question.

Figure 18: Distribution of responses to investment policy



Source: SAM Pillar II Readiness Survey

Hypothesis testing

H_0 = There is no relationship between the insurer having an explicit investment policy in place and the insurer's self-assessment of current compliance with the SAM requirements.

H_1 = There is a relationship between the insurer having an explicit investment policy in place and the insurer's self-assessment as ready to comply with the SAM requirements.

For the purpose of analysing the life and non-life insurers' results, the 'No' and 'Partial' responses were combined since more than 20% of the cells had an expected count of less than five. After combining the responses, the minimum cell count for applying the chi-squared test was met and therefore it was used for the life and non-life analyses as summarised in Table 20.

Table 20: Pearson's chi-squared test on investment policy

	Life	Non-life
Investment policy	$\chi^2 (1) = 5.13,$ $p = 0.024$	$\chi^2 (1) = 3.13,$ $p = 0.077$

Source: SPSS output

The results of the chi-squared test for the analysis of **life insurers** indicate that the null hypothesis should be rejected as shown by the test statistic and p value of $\chi^2 (1) = 5.13$, $p = 0.024$ respectively. Table 21 summarises the cross tabulation of responses to an investment policy and the insurers' self-assessment of readiness.

Table 21: Cross tabulation analysis of investment policy for life insurers

		Self-assessment		Total
		Not ready	Ready	
Investment policy	No or partial			
	Count	12.0	5.0	17.0
	Expected Count	8.0	9.0	17.0
	% within C.1.5.2	70.6%	29.4%	100.0%
	Yes			
	Count	19.0	30.0	49.0
	Expected Count	23.0	26.0	49.0
	% within C.1.5.2	38.8%	61.2%	100.0%
	Total			
Count	31.0	35.0	66.0	
Expected Count	31.0	35.0	66.0	
% within C.1.5.2	47.0%	53.0%	100.0%	

Source: SPSS output

Table 21 indicates that 70.6% of the life insurers who responded with **No or Partial** assessed themselves as not ready, which is more than expected. In addition, 61.2% of the life insurers who responded with **Yes** assessed themselves as ready, which is more than expected.

Therefore, the results indicate that the life insurers who had an explicit investment management policy in place were more likely to assess themselves as ready for the SAM requirements than those who did not or partially had it in place.

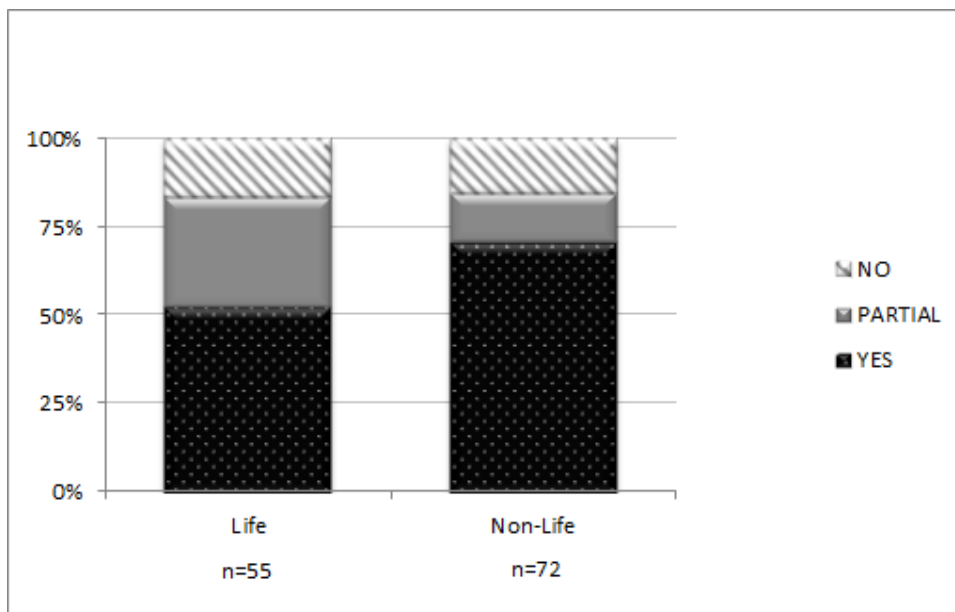
In terms of Pearson's chi-squared test for **non-life insurers** ($\chi^2(1) = 3.127, p = 0.077$), there is insufficient evidence to reject the null hypothesis based on the responses provided. The results indicate that there is no significant relationship at the 95% confidence level between non-life insurers having an explicit investment policy in place

and assessing themselves as ready for the SAM requirements. Although this study used a 95% confidence level, this result would have been significant at the 90% confidence level.

4.3.5.3 Risk transfer policy

The focus of this question was to determine whether the insurer's risk management policy included an explicit reinsurance and other forms of risk transfer policy. Figure 19 illustrates the distribution of responses to this question.

Figure 19: Distribution of responses to risk transfer policy



Source: SAM Pillar II Readiness Survey

Hypothesis testing

H_0 = The insurer having an explicit risk transfer policy in place has no relationship with the insurer's self-assessment of current compliance with the SAM requirements.

H_1 = There is a relationship between an insurer having an explicit risk transfer policy in place and the insurer's self-assessment as ready to comply with the SAM requirements.

The results of the chi-squared tests are summarised in Table 22 reflecting the analysis of the life and non-life insurers separately.

Table 22: Pearson's chi-squared test on explicit risk transfer policy

	Life	Non-life
Risk transfer policy	$\chi^2 (2) = 11.03,$ $p = 0.004$	$\chi^2 (2) = 7.97,$ $p = 0.019$

Source: SPSS output

The results of the chi-squared test for the analysis of **life insurers** indicate that the null hypothesis should be rejected as shown by the test statistic and p value of $\chi^2 (2) = 11.03, p = 0.004$ respectively. Table 23 summarises the cross tabulation of responses to an explicit risk transfer policy and the insurers' self-assessment of readiness.

Table 23: Cross tabulation analysis of explicit risk transfer policy for life insurers

		Self-assessment		Total
		Not ready	Ready	
Risk transfer policy	No			
	Count	5.0	4.0	9.0
	Expected Count	5.1	3.9	9.0
	% within C.1.5.3	55.6%	44.4%	100.0%
	Partial			
	Count	15.0	2.0	17.0
	Expected Count	9.6	7.4	17.0
	% within C.1.5.3	88.2%	11.8%	100.0%
	Yes			
Count	11.0	18.0	29.0	
Expected Count	16.3	12.7	29.0	
% within C.1.5.3	37.9%	62.1%	100.0%	
Total				
Count	31.0	24.0	55.0	
Expected Count	31.0	24.0	55.0	
% within C.1.5.3	56.4%	43.6%	100.0%	

Source: SPSS output

Table 23 indicates that 88.2% of the life insurers who responded with **Partial** assessed themselves as not ready, which is more than expected. In addition, 62.1% of the life insurers who responded with **Yes** assessed themselves as ready, which is more than expected. However, there is no significant difference between the life insurers that responded with **No** and whether they assessed themselves as ready or not ready. A possible reason for this could be that some life insurers who chose to retain the majority of the risk instead of reinsuring the risk would have limited use for a documented risk transfer policy.

Therefore, the results indicate that the life insurers who had an explicit risk transfer policy in place were more likely to assess themselves as being ready for the SAM requirements than those who partially had it in place.

The results of the chi-squared test for the analysis of **non-life insurers** indicate that the null hypothesis should be rejected as shown by the test statistic and p value of $\chi^2(2) = 7.97$, $p = 0.019$ respectively. Table 24 summarises the cross tabulation of responses to a risk transfer policy and the insurers' self-assessment of readiness.

Table 24: Cross tabulation analysis of risk transfer policy for non-life insurers

		Self-assessment		Total
		Not ready	Ready	
Risk transfer policy	No			
	Count	9.0	2.0	11.0
	Expected Count	5.2	5.8	11.0
	% within C.1.5.3	81.8%	18.2%	100.0%
	Partial			
	Count	6.0	4.0	10.0
	Expected Count	4.7	5.3	10.0
	% within C.1.5.3	60.0%	40.0%	100.0%
	Yes			
Count	19.0	32.0	51.0	
Expected Count	24.1	26.9	51.0	
% within C.1.5.3	37.3%	62.7%	100.0%	
Total				
Count	34.0	38.0	72.0	
Expected Count	34.0	38.0	72.0	
% within C.1.5.3	47.2%	52.8%	100.0%	

Source: SPSS output

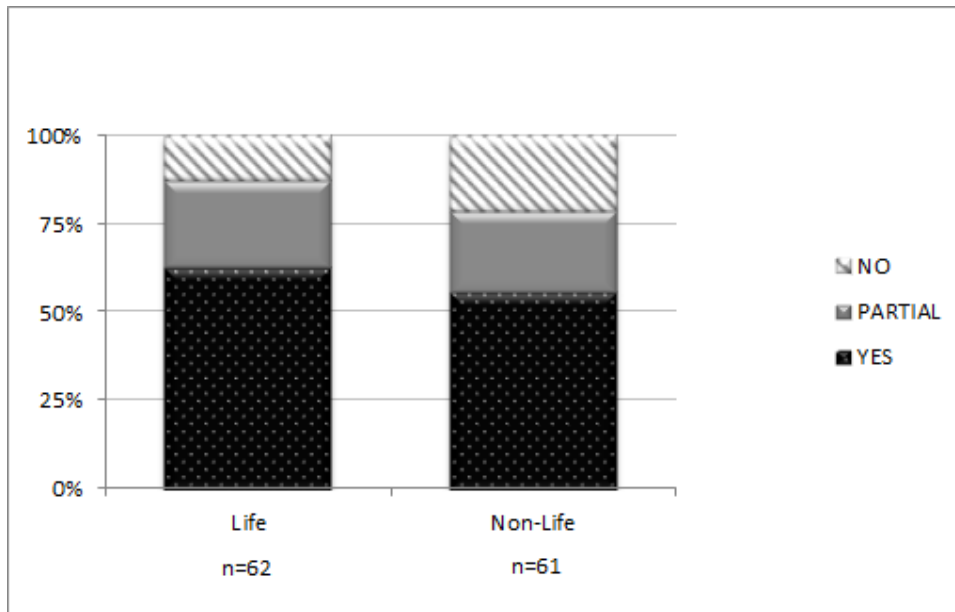
As indicated in Table 24, of the non-life insurers who responded with **No**, 81.8% assessed themselves as not ready, which is more than expected. Furthermore, 62.7% of the non-life insurers who responded with **Yes**, assessed themselves as ready, which is more than expected. Of the non-life insurers that responded with **Partial**, 60% rated themselves as not ready, which is more than expected.

Therefore, the results indicate that the non-life insurers who had an explicit risk transfer policy in place were more likely to assess themselves as being ready for the SAM requirements than those who did not or partially had it in place.

4.3.5.4 Remuneration policy

The question was whether the insurer's risk management policy included an explicit remuneration policy. Figure 20 illustrates the distribution of responses to this question.

Figure 20: Distribution of responses to remuneration policy



Source: SAM Pillar II Readiness Survey

Hypothesis testing

H_0 = The insurer having an explicit remuneration policy in place has no relationship with the insurer's self-assessment of current compliance with the SAM requirements.

H_1 = There is a relationship between an insurer having an explicit remuneration policy in place and the insurer's self-assessment as ready to comply with the SAM requirements.

The results of the chi-squared tests are summarised in Table 25 reflecting the analysis of the life and non-life insurers separately.

Table 25: Pearson's chi-squared test on remuneration policy

	Life	Non-life
Remuneration policy	$\chi^2 (1) = 0.97,$ $p = 0.325$	$\chi^2 (2) = 0.46,$ $p = 0.793$

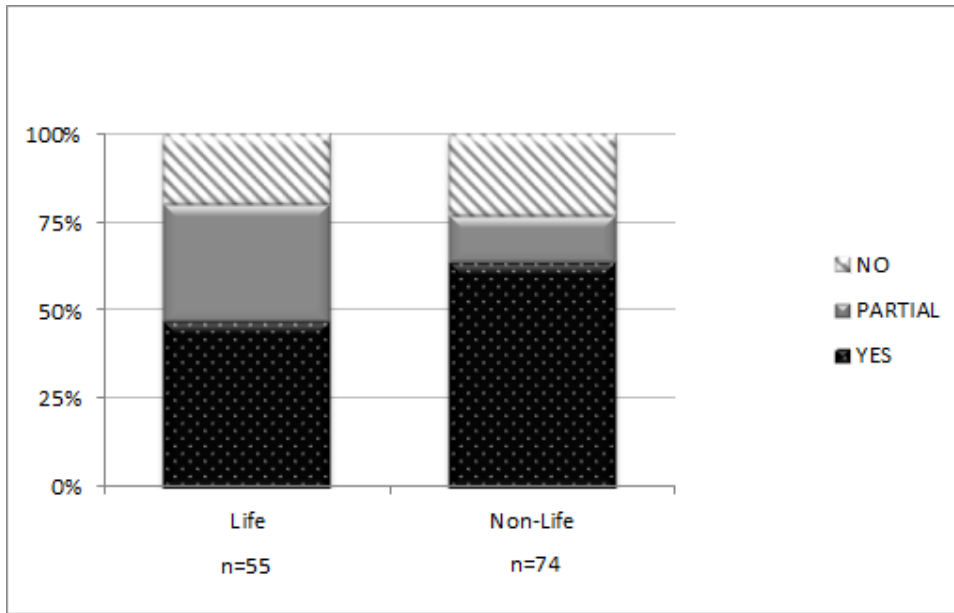
Source: SPSS output

In terms of Pearson's chi-squared tests for the life insurers ($\chi^2 (1) = 0.97, p = 0.325$) and non-life insurers ($\chi^2 (2) = 0.46, p = 0.793$), there is insufficient evidence to reject the null hypotheses based on the responses provided. The results indicate that there is no significant relationship at the 95% confidence level between insurers having an explicit remuneration policy in place and assessing themselves as ready for the SAM requirements.

4.3.5.5 Underwriting risk policy

The question was whether the insurer's risk management policies included explicit policies in relation to underwriting risk. Figure 21 illustrates the distribution of responses to this question.

Figure 21: Distribution of responses to underwriting risk policy



Source: SAM Pillar II Readiness Survey

Hypothesis testing

H_0 = There is no relationship between the insurer's risk management policy including an explicit underwriting policy and the insurer's self-assessment of current compliance with the SAM requirements.

H_1 = There is a relationship between the insurer's risk management policy including an explicit underwriting risk policy and the insurer's self-assessment as ready to comply with the SAM requirements.

The results of the chi-squared tests are summarised in Table 26 reflecting the analysis of the life and non-life insurers separately.

Table 26: Pearson's chi-squared test on explicit underwriting risk policy

	Life	Non-life
Underwriting risk policy	$\chi^2 (2) = 1.65,$ $p = 0.438$	$\chi^2 (2) = 5.01,$ $p = 0.082$

Source: SPSS output

In terms of Pearson's chi-squared tests for the life insurers ($\chi^2 (2) = 1.65, p = 0.438$) and non-life insurers ($\chi^2 (2) = 5.01, p = 0.082$), there is insufficient evidence to reject the null hypotheses based on the responses provided. The results indicate that there is no significant relationship at the 95% confidence level between insurers having an explicit underwriting risk policy in place and assessing themselves as ready for the SAM requirements. Although the study used a 95% confidence level, this result would have been significant at the 90% confidence level.

4.3.5.6 Summary of section on types of risk management policies

The results indicate that **life** insurers with an explicit ALM policy, an investment policy and a risk transfer policy in place were more likely to assess themselves as ready for the SAM requirements than those who did not or partially had the policies in place.

For **non-life** insurers, the results indicate that those who had an explicit ALM policy and a risk transfer policy in place were more likely to assess themselves as ready for the SAM requirements than those who did not or partially had the policies in place.

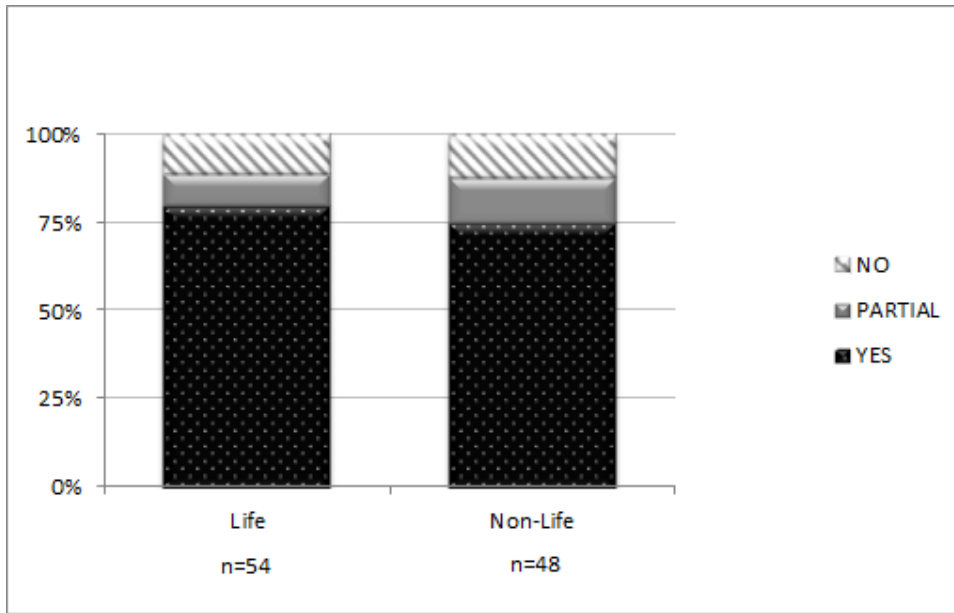
4.3.6 Features of remuneration policy

The focus of this section of the questionnaire was to examine the features of the insurer's explicit remuneration policy. This consisted of three separate questions discussed in the next section.

4.3.6.1 Governance oversight of remuneration policy

The question focused on whether the board of directors or one of its committees oversaw and implemented the remuneration policy. Figure 22 illustrates the distribution of responses to this question.

Figure 22: Distribution of responses to governance oversight of remuneration policy



Source: SAM Pillar II Readiness Survey

Hypothesis testing

H_0 = There is no relationship between an insurer having governance oversight of remuneration policy and the insurer's self-assessment of current compliance with the SAM requirements.

H_1 = There is a relationship between an insurer having governance oversight of remuneration policy and the insurer's self-assessment as ready to comply with the SAM requirements.

For the purpose of analysing the life and non-life insurers' results, the %No+ and %Partial+ responses were combined because more than 20% of the cells had an expected count of less than five. Following the combining of responses, the minimum cell count for applying the chi-squared test was met and therefore it was used for the analysis of the life and non-life insurers as summarised in Table 27.

Table 27: Pearson's chi-squared test on governance oversight of remuneration policy

	Life	Non-life
Remuneration committee	$\chi^2 (1) = 0.11,$ $p = 0.735$	$\chi^2 (1) = 4.00,$ $p = 0.046$

Source: SPSS output

In terms of Pearson's chi-squared test for **life insurers** ($\chi^2 (1) = 0.11, p = 0.735$), there is insufficient evidence to reject the null hypothesis based on the responses provided. The results indicate that there is no significant relationship at the 95% confidence level between life insurers having governance oversight of remuneration policy and assessing themselves as ready for the SAM requirements.

The results of the chi-squared test for the analysis of the **non-life insurers** indicate that the null hypothesis should be rejected as shown by the test statistic and p value of $\chi^2 (1) = 4.00, p = 0.046$ respectively. Table 28 summarises the cross tabulation of responses to governance oversight of remuneration policy and the non-life insurers' self-assessment of readiness.

Table 28: Cross tabulation analysis of governance oversight of remuneration policy for non-life insurers

		Self-assessment		Total
		Not ready	Ready	
Governance oversight of remuneration policy	No or partial			
	Count	9.0	3.0	12.0
	Expected Count	6.0	6.0	12.0
	% within C.1.6.1	75.0%	25.0%	100.0%
	Yes			
	Count	15.0	21.0	36.0
Expected Count	18.0	18.0	36.0	
% within C.1.6.1	41.7%	58.3%	100.0%	
Total				
Count	24.0	24.0	48.0	
Expected Count	24.0	24.0	48.0	
% within C.1.6.1	50.0%	50.0%	100.0%	

Source: SPSS output

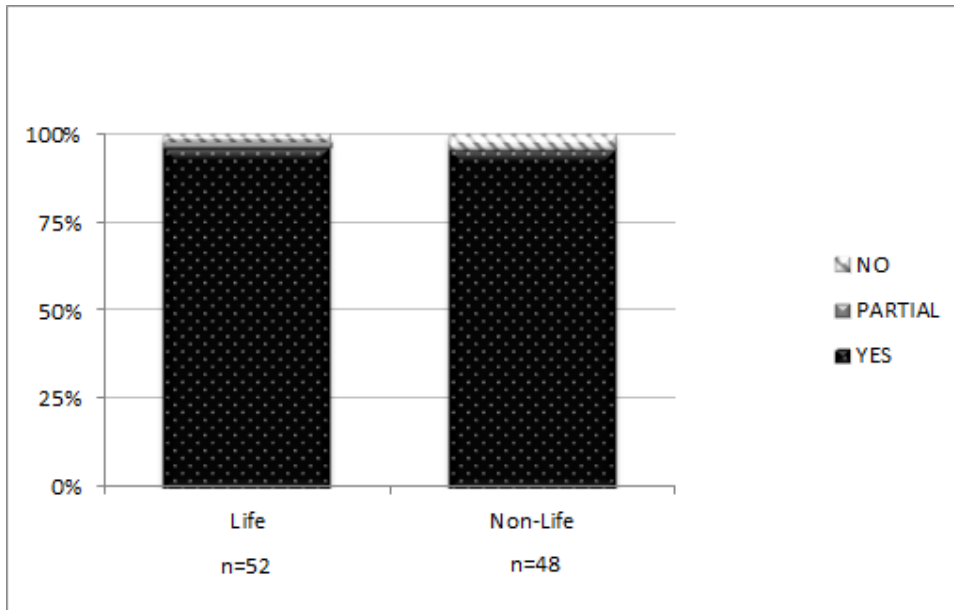
Table 28 shows that of the non-life insurers who responded with **No** or **Partial**, 75% assessed themselves as not ready, which is more than expected. In addition, 58.3% of the non-life insurers who responded with **Yes** assessed themselves as ready, which is more than expected.

Therefore, the results indicate that the non-life insurers who had governance oversight of remuneration policy were more likely to assess themselves as ready for the SAM requirements than the non-life insurers who did not have governance oversight.

4.3.6.2 Scope of remuneration policy

The question explored whether the remuneration policy clearly stated to whom it applied. Figure 23 illustrates the distribution of responses to this question.

Figure 23: Distribution of responses to scope of remuneration policy



Source: SAM Pillar II Readiness Survey

Hypothesis testing

H_0 = There is no relationship between the insurers' remuneration policy clearly stating to whom it applied and the insurers' self-assessment of current compliance with the SAM requirements.

H_1 = There is a relationship between the insurers' remuneration policy clearly stating to whom it applied and the insurers' self-assessment as ready to comply with the SAM requirements.

For the purpose of analysing the **life** insurers' results, the **No** and **Partial** responses were combined since more than 20% of the cells had an expected count of less than five.

However, after the life insurers' **No** and **Partial** responses were combined, the minimum expected count of 0.96 required the use of Fisher's exact test to analyse the life results.

The **non-life** insurers responded only with **No** and **Yes** to the question regarding the scope of the remuneration policy. However, the minimum expected count of 0.96 required the use of Fisher's exact test to analyse the non-life insurers' results as indicated in Table 29.

Table 29: Statistical tests on specified reports on scope of remuneration policy

	Life	Non-life
Scope of remuneration policy	Fisher's exact test $p = 1.000$	Fisher's exact test $p = 0.224$

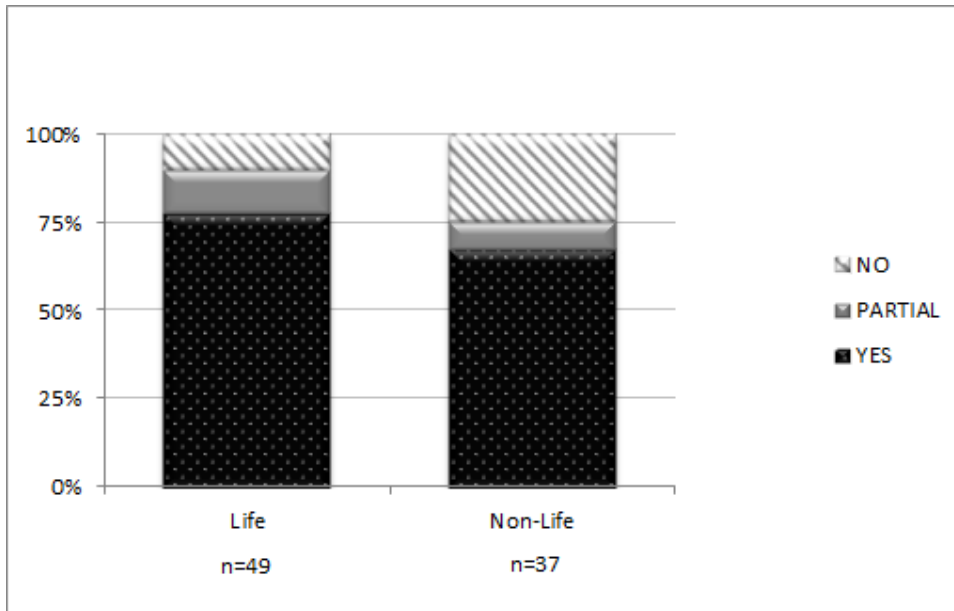
Source: SPSS output

In terms of Fisher's exact test for life insurers ($p = 1.000$) and non-life insurers ($p = 0.224$), there is insufficient evidence to reject the null hypotheses based on the responses provided. The results indicate that there is no significant relationship at the 95% confidence level between whether the insurers' remuneration policy clearly stated to whom it applied and assessing themselves as ready for the SAM requirements.

4.3.6.3 Remuneration alignment

The question asked whether the deferred components of remuneration align with the time horizons of risk. Figure 24 illustrates the distribution of responses to this question.

Figure 24: Distribution of responses to remuneration alignment



Source: SAM Pillar II Readiness Survey

Hypothesis testing

H_0 = There is no relationship between the remuneration policy aligning employee remuneration with company risk and the insurers' self-assessment of current compliance with the SAM requirements.

H_1 = There is a relationship between the remuneration policy aligning employee remuneration with company risk and the insurers' self-assessment as ready to comply with the SAM requirements.

For the purpose of analysing the life and non-life insurers' results, the %No+ and %Partial+ responses were combined because more than 20% of the cells had an expected count of less than five. Following the combining of responses, the chi-squared test assumptions were met and therefore it was used for the analysis of the life and non-life insurers as summarised in Table 30.

Table 30: Pearson's chi-squared test on remuneration alignments

	Life	Non-life
Remuneration alignments	$\chi^2 (1) = 0.64,$ $p = 0.425$	$\chi^2 (1) = 0.71,$ $p = 0.399$

Source: SPSS output

In terms of Pearson's chi-squared tests for the life insurers ($\chi^2 (1) = 0.64, p = 0.425$) and non-life insurers ($\chi^2 (1) = 0.71, p = 0.399$), there is insufficient evidence to reject the null hypotheses based on the responses provided. The results indicate that there is no significant relationship at the 95% confidence level between whether the remuneration policy aligned employee remuneration with company risk and assessing themselves as ready for the SAM requirements.

4.3.6.4 Summary of section on features of remuneration policy

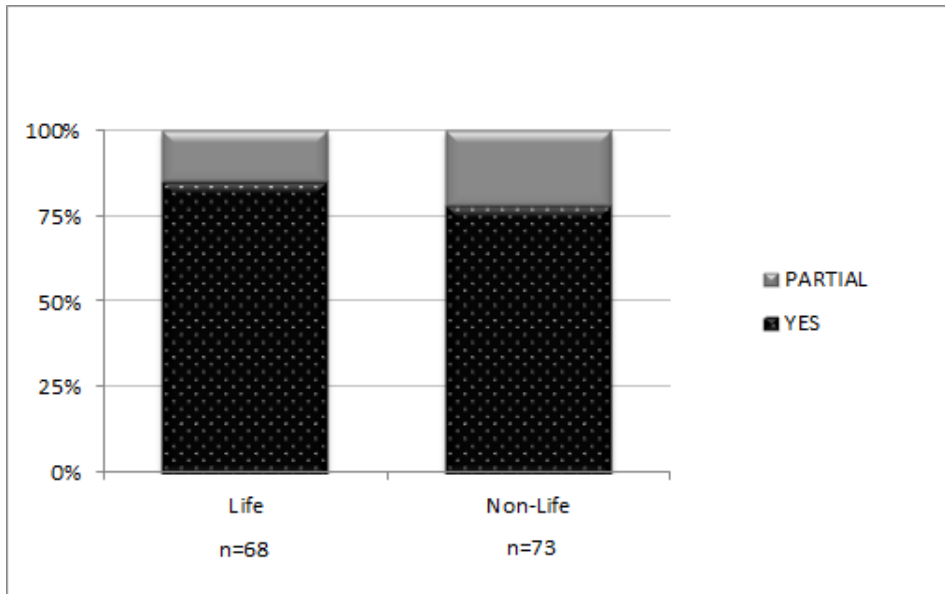
The results indicate that for **life** insurers, there is no significant relationship between having an established remuneration committee, a remuneration policy with a clearly stated scope, aligning employee remuneration with company risk and assessing themselves as ready for the SAM requirements.

For **non-life** insurers, the results indicate that those who had a remuneration committee in place were more likely to assess themselves as ready for the SAM requirements than those who did not or partially had the policy in place.

4.3.7 Existence of business continuity plan

The focus of this question was to confirm whether the insurer had a contingency and business continuity plan in place. Figure 25 illustrates the distribution of responses to this question.

Figure 25: Distribution of responses to business continuity plan



Source: SAM Pillar II Readiness Survey

Hypothesis testing

H_0 = There is no relationship between the insurer having a business continuity plan in place and the insurer's self-assessment of current compliance with the SAM requirements.

H_1 = There is a relationship between the insurer having a business continuity plan in place and the insurer's self-assessment as ready to comply with the SAM requirements.

The insurers responded only with %Partial+and %Yes+to this question. For the life insurers' analysis, the minimum expected count was 4.71 resulting in using Fisher's exact test to analyse the life insurers' results. The minimum cell count was met for applying the chi-squared test for non-life insurers with the results for both summarised in Table 31.

Table 31: Statistical test on business continuity plan

	Life	Non-life
Business continuity plan	Fisher's exact test, $p = 0.498$	$\chi^2 (1) = 1.01,$ $p = 0.315$

Source: SPSS output

In terms of Fisher's exact test for life insurers ($p = 0.498$) and Pearson's chi squared test for non-life insurers ($\chi^2 (1) = 1.01, p = 0.315$), there is insufficient evidence to reject the null hypotheses based on the responses provided. The results indicate that there is no significant relationship at the 95% confidence level between insurers having a business continuity plan in place and assessing themselves as ready for the SAM requirements.

4.4 CONCLUSION

Results from the analysis of individual relationships for **life** insurers showed that there was a significant relationship at the 95% confidence level between having in place a risk management system that documented the risk management strategy, an explicit asset liability management policy, an investment policy and a risk transfer policy and assessing themselves as ready for the Solvency Assessment and Management requirements. Therefore, life insurers who had these components of the risk management framework in place were more likely to assess themselves as ready for the future Solvency Assessment and Management Pillar II risk management requirements.

For **non-life** insurers, results showed that there was a significant relationship at the 95% confidence level between having in place a risk management system that documented the risk management strategy, an explicit asset liability management policy, a risk transfer policy and governance oversight of remuneration policy and assessing themselves as ready for the Solvency Assessment and Management requirements. Therefore, non-life insurers who had these components of the risk management framework in place were more likely to assess themselves as ready for the future Solvency Assessment and Management Pillar II risk management requirements.

In Chapter 5, the findings of the analysis of individual relationships will be discussed coupled with what was found in prior research.

CHAPTER 5: INTERPRETATION OF RESULTS

5.1 INTRODUCTION

In Chapter 4, the data received from the Financial Services Board was described and summarised before analysing the individual relationships using Pearson's chi-squared test and Fisher's exact test. The aspects of the risk management framework that were associated with insurers assessing themselves as ready for the Solvency Assessment and Management Pillar II risk management requirements were identified. In this chapter, the individual relationships are analysed in the context of previous research on risk management. First, a summary of the test statistics for the analysis of the life and non-life insurers per question is provided followed by an interpretation of the results for the analysis of the life and non-life insurers separately.

5.2 SUMMARY OF THE TEST STATISTICS RESULTS

The results of the test statistics for the analysis of the life and non-life insurers per question are summarised in

Table 32.

Table 32: Test statistics summary

		Life	Non-life
Implementation of risk management system		$\chi^2(1) = 1.10$ $p = 0.294$	$\chi^2(1) = 10.42$, $p = 0.001^{**}$
Documentation of risk management strategy	Actuarial assumption setting principles and process	$\chi^2(2) = 4.96$, $p = 0.084^*$	$\chi^2(2) = 7.16$, $p = 0.028^{**}$
	Assigned risk management responsibilities	Fisher's exact test $p < 0.001^{***}$	$\chi^2(1) = 17.852$, $p < 0.001^{***}$
	Documented processes and procedures on material risks	Fisher's exact test $p = 0.010^{**}$	$\chi^2(1) = 13.29$, $p < 0.001^{***}$

	Specified reports on material risks	Fisher's exact test $p = 0.005^{**}$	$\chi^2 (1) = 10.93,$ $p = 0.001^{**}$
External review of risk management systems		$\chi^2 (1) = 2.74,$ $p = 0.098^*$	$\chi^2 (1) = 1.83,$ $p = 0.176$
Existence of risk management policies		$\chi^2 (1) = 8.38,$ $p = 0.004^{**}$	$\chi^2 (1) = 1.16,$ $p = 0.282$
Types of risk management policies	ALM policy	$\chi^2 (2) = 9.54,$ $p = 0.008^{**}$	$\chi^2 (1) = 5.65,$ $p = 0.017^{**}$
	Investment policy	$\chi^2 (1) = 5.13,$ $p = 0.024^{**}$	$\chi^2 (1) = 3.13,$ $p = 0.077^*$
	Risk transfer policy	$\chi^2 (2) = 11.03,$ $p = 0.004^{**}$	$\chi^2 (2) = 7.97,$ $p = 0.019^{**}$
	Remuneration policy	$\chi^2 (1) = 0.97,$ $p = 0.325$	$\chi^2 (2) = 0.46,$ $p = 0.793$
	Underwriting risk policy	$\chi^2 (2) = 1.65,$ $p = 0.438$	$\chi^2 (2) = 5.01,$ $p = 0.082^*$
Features of remuneration policy	Governance oversight of remuneration policy	$\chi^2 (1) = 0.11,$ $p = 0.735$	$\chi^2 (1) = 4.00,$ $p = 0.046^{**}$
	Scope of remuneration policy	Fisher's exact test $p = 1.000$	Fisher's exact test $p = 0.224$
	Remuneration alignment	$\chi^2 (1) = 0.64,$ $p = 0.425$	$\chi^2 (1) = 0.71,$ $p = 0.399$
Existence of business continuity plan		Fisher's exact test, $p = 0.498$	$\chi^2 (1) = 1.01,$ $p = 0.315$

Source: SPSS output

*** Significant at $p < 0.01$

** Significant at $p < 0.05$

* Significant at $p < 0.10$

The discussion of the results in Table 32 is grouped into three sections, namely risk management system, risk management policies and business continuity. Each section with the underlying questions will be discussed next.

5.3 RISK MANAGEMENT SYSTEM

According to Paragraph 10(3)(a) of Board Notice 158 (Financial Services Board, 2014), a risk management system must, at least include a clearly defined and well documented risk management strategy which takes into account the insurer's overall business strategy and business activities. Therefore, the questions focusing on the risk management system, namely implementation of risk management system, documentation of the risk management strategy and the external review of the risk management system will form part of the risk management system section.

5.3.1 Implementation of risk management system

The results of the analysis for the **life insurers** indicated that there was no significant relationship between life insurers having a risk management system in place and assessing themselves as ready to comply with the Solvency Assessment and Management requirements. According to Section 10(1) of Board Notice 158 (Financial Services Board, 2014), an insurer must establish and maintain an effective risk management system, comprising the totality of strategies, policies and procedures for identifying, assessing, monitoring, managing, and reporting of all reasonably foreseeable current and emerging material risks to which the insurer may be exposed.

In terms of legislation, it is compulsory for a life insurer to have an implemented risk management system in place. Life insurers will be challenged on their perception regarding the importance of this aspect in preparing for the Solvency Assessment and Management requirements.

Conversely, the results indicated that there was a relationship between **non-life** insurers currently having a risk management system in place and assessing themselves as ready to comply with the Solvency Assessment and Management requirements. This is supported by the study of Atluntas *et al.* (2011) on German property-liability insurance companies, which considered the proportion of property-liability insurance companies that had already implemented enterprise risk management. The study found that the majority of

the participating insurers had in place a risk management strategy that defined their risk management system. Furthermore, Atluntas *et al.* (2011) established that it was high priority for the insurers to improve their risk management capabilities and embed risk management in the whole organisation in anticipation of Solvency II.

It can therefore be concluded that having a risk management system in place is associated with non-life insurers assessing themselves as ready for the Solvency Assessment and Management requirements. This result from the analysis of the Pillar II Readiness Survey is supported by the research of Atluntas *et al.* (2011).

5.3.2 Documentation of risk management strategy

Because the allocation of risk management responsibilities and reporting the processes and procedures of material risks to senior management or the board are interrelated, they are discussed collectively.

The results indicated that there was no significant relationship between life insurers who **documented the actuarial assumption setting principles and process** and assessing themselves as ready to comply with the Solvency Assessment and Management requirements. According to Section 20 of the Long-Term Insurance Act (52/1998), it is compulsory for a life insurer to appoint a statutory actuary to perform the actuarial function. In addition, according to Paragraph 23(1) of Board Notice 158 (Financial Services Board, 2014), an insurer must establish and maintain control functions.

Furthermore, the OECD (2011) guidelines on insurer governance state that the insurers should have an actuary or actuarial function to estimate insurance risks, calculate policy liabilities and determine, or provide an opinion on, the appropriate technical provisions to cover these obligations+and that %the actuary (or actuarial function) should perform sound actuarial valuations+. Because it is required by legislation, it should be relevant that life insurers establish and maintain an actuarial function, in order to comply with the Solvency Assessment and Management requirements.

On the other hand, the results indicated that there was a significant relationship between non-life insurers who documented the actuarial assumption setting principles and process and assessing themselves as ready to comply with the Solvency Assessment and Management requirements. This result complies with Section 19(A) of the Short-Term Insurance Act (53/1998) stipulating that a non-life insurer may be directed by the regulator to appoint a statutory actuary to perform the actuarial function.

The significant relationship between insurers whose risk management strategy **assigns risk management responsibilities across all activities of the company** and assessing themselves as ready to comply with the Solvency Assessment and Management requirements is supported by the study of Atluntas *et al.* (2011). Atluntas *et al.* (2011) found that insurers do assign risk management responsibilities and allocate risk responsibilities to a specific role or department. Drzik (2005) is also of the opinion that a successful organisational structure needs to appoint the right people and establish demarcated responsibilities for each role and function.

Even though the appropriate risk and control functions exist, it is important to allocate specific roles and to promote effective and efficient co-ordination among the management teams to minimise the gaps in the reporting and control function (Institute of Internal Auditors, 2013). The significant relationship between the insurers who **documented the processes and procedures on material risks** and assessed themselves as ready to comply with the Solvency Assessment and Management requirements is supported by the three lines of defence model. The Institute of Internal Auditors (2013) found that the first line of defence in the three lines of defence model will assist operational management in executing risk and control procedures.

The operational management identifies, assesses, controls, and mitigate risks, guiding the development and implementation of internal policies and procedures and ensuring that activities are consistent with goals and objectives+ (Institute of Internal Auditors, 2013:3). The Institute of Internal Auditors (2013) recommends that the risk and control processes must be structured in accordance with the three lines of defence model to improve the effectiveness of the insurers risk management system.

The significant relationship between insurers **specifying reports to inform senior management and the board of material risks** and assessing themselves as ready to comply with the Solvency Assessment and Management requirements is supported by the study of Stulz (2008). Stulz (2008) found that communication failures appeared to be one of the main contributors of risk management failure in the global financial crisis of 2007 to 2009. He also found that effective communication is possible through timely reports informing senior management and the board of material risks.

This is also supported by the study of Ashby (2011), in which communication formed part of the important **C** category as an underlying cause of the banking crisis, with the majority of the interviewees raising the issue of risk reporting. The interviewees highlighted the failure in **the ability to report risk management information in a clear and meaningful way** (Ashby, 2011:338). Another reason for the failure in communication was that management deliberately withheld information, for example, for internal political reasons. This summarises the statement by Stulz (2008:41), namely that **a failure in communicating risk to management is also a risk management failure**.

It can therefore be concluded that there is a significant relationship between documenting risk management strategies and insurers assessing themselves as ready for the Solvency Assessment and Management requirements. This result from the analysis of the Pillar II Readiness Survey is supported by the findings from other research on the documentation of the risk management strategy.

5.3.3 External review of risk management systems

The results of the analysis for **life and non-life insurers** indicated that there was no significant relationship between insurers having their risk management system externally reviewed and assessing themselves as ready to comply with the Solvency Assessment and Management requirements.

The results are different compared to the three lines of defence model with the external review done by the internal audit function forming part of the third line of defence. The

internal audit function provides an independent assurance on the insurers' effectiveness of risk management (Institute of Internal Auditors, 2013). The results are also different compared to the study by Atluntas *et al.* (2011), which found that the majority of the participating insurers actually evaluated their risk management process and that the process was performed by an independent reviewer such as the internal audit department. Furthermore, it was found that the participating insurers' independent reviewer reported directly to the senior management or the board of directors. This conforms to the three lines of defence model where the internal audit function reports directly to senior management or the board of directors (Institute of Internal Auditors, 2013).

It is now compulsory in terms of Paragraph 10(4)(a) of Board Notice 158 (Financial Services Board, 2014) that the risk management system must be reviewed regularly by the internal audit function or an objective external reviewer to ensure that the system is effective and that necessary modifications are identified and made in a timely manner. It therefore should be relevant for insurers to have their risk management system externally reviewed when assessing their readiness for the Solvency Assessment and Management requirements.

5.4 RISK MANAGEMENT POLICIES

5.4.1 Existence of risk management policies

The results indicated that there was a significant relationship between **life insurers** having risk management policies in place and assessing themselves as ready to comply with the Solvency Assessment and Management requirements. This result complies with the OECD (2011) guidelines on insurer governance, namely that risk management policies should be developed to form part of the risk management framework.

For **non-life** insurers, the results indicated that there was no significant relationship between the non-life insurers having risk management policies in place and assessing themselves as ready to comply with the Solvency Assessment and Management requirements. Because Paragraph 11(1) of Board Notice 158 (Financial Services Board,

2014) requires that an insurer must develop and regularly review an adequate written overall risk management policy, it therefore should be relevant for non-life insurers to have risk management policies in place when assessing their readiness for the Solvency Assessment and Management requirements.

The above results are considered in more detail in terms of the types of risk management policies.

5.4.2 Asset-liability management policy

The results for **life** and **non-life** insurers indicated that there was a significant relationship between having an explicit asset-liability management policy in place and the insurers' self-assessment as ready to comply with the Solvency Assessment and Management requirements.

Asset-liability management (ALM) is a process where insurers co-ordinate their asset management with their insurance operations. Atluntas *et al.* (2011) found that ALM existed in the majority of the participating insurers and that most of the insurers' investment strategy was structured to fit the insurance portfolio. Furthermore, the study found that only a few insurers indicated that ALM was a simultaneous process. Similarly, Lehmann and Hofmann (2010) found that the lessons learnt from the equity market downturn between 2001 and 2003 resulted in a strengthening of the ALM function. This, in turn, prepared the insurance sector to remain resilient during the 2007 to 2009 financial crisis and contributed, to a certain amount, to the stability of the financial markets (Lehmann & Hofmann, 2010).

It can therefore be concluded that having an explicit asset-liability management (ALM) policy in place is associated with insurers assessing themselves as ready for the Solvency Assessment and Management requirements. This result from the analysis of the Pillar II Readiness Survey is supported by the findings from other research on formalising and strengthening the ALM function.

5.4.3 Investment policy

The results for **life** insurers indicated that there was a significant relationship between the insurer having an explicit investment policy in place and the insurer's self-assessment as ready to comply with the Solvency Assessment and Management requirements.

These results are supported by the study of Atluntas *et al.* (2011), in which the majority of the insurers had investment limits that were more rigorous in order to comply with regulatory requirements. Life insurers' perception of the importance of the investment policy is in line with the regulatory requirement now promulgated in Paragraph 15(1)(b) of Board Notice 158 (Financial Services Board, 2014), namely that an insurer's investment policy must specify the nature, role and extent of the insurer's investment activities and how the insurer ensures compliance with the value of limitations on asset requirements as prescribed under the Act.

It can therefore be concluded that having an explicit investment policy in place is associated with life insurers assessing themselves as ready for the Solvency Assessment and Management requirements. This result from the analysis of the Pillar II Readiness Survey is supported by the findings from other research on formalising the investment function.

Conversely, the results for **non-life** insurers indicated that there was no significant relationship between having an explicit investment policy in place to be ready for the Solvency Assessment and Management requirements. This result is different compared to other studies' findings on formalising the investment function and recently promulgated regulatory requirements.

5.4.4 Risk transfer policy

The results for **life** and **non-life** insurers indicated that there was a significant relationship between the insurer having an explicit risk transfer policy in place and the insurer's self-assessment as ready to comply with the Solvency Assessment and Management

requirements. Insurers' perception of the importance of the risk transfer policy is in line with the regulatory requirement now promulgated in Paragraph 17 of Board Notice 158 (Financial Services Board, 2014), namely that an insurer's risk management policies must include reinsurance and other forms of risk transfer policy.

According to Lehmann and Hofmann (2010), it is common for insurers to buy reinsurance against low frequency, high severity events, while thoroughly analysing exposures to large natural catastrophes, for example, the Great California earthquake. Furthermore, Lehmann and Hofmann (2010) are of the opinion that failing to properly monitor accumulated exposures could lead to possible large losses from a single event, as demonstrated by hurricanes Gustav and Ike in 2008, and the US housing market meltdown. Theoretically, as soon as risk tolerance limits are breached, insurers should seek to transfer or avoid any further risk. For example, a non-life insurer can buy reinsurance protection or stop new business in a certain region.

It can therefore be concluded that having an explicit risk transfer policy in place is associated with insurers assessing themselves as ready for the Solvency Assessment and Management requirements.

5.4.5 Underwriting risk policy

The results for **life** and **non-life** insurers indicated that there was no significant relationship between the insurers having an explicit underwriting policy in place and assessing themselves as ready to comply with the Solvency Assessment and Management requirements.

According to Article 13 of the Solvency II Level 1 Text (European Union, 2009), *underwriting risk* means the risk of loss or of adverse change in the value of insurance liabilities, due to inadequate pricing and provisioning assumptions. Atluntas *et al.* (2011) wanted to determine how insurance companies managed their underwriting risks. Their study found that the majority of the participating insurers managed underwriting risk through risk limits that were annually evaluated and, if necessary, amended.

Lehmann and Hofmann (2010) argue that exposure management should be simple enough to identify, quantify and manage. As part of exposure management, insurers generally choose not to accept exposures that lead to concentrations of underwriting risk in the portfolio. This management of underwriting risk might imply the situation described by Lehmann and Hofmann (2010) where insurers may elect to temporarily cease accepting underwriting risk in a market until the premium charged matches the underwriting risk accepted by the insurer. This example by Lehmann and Hofmann (2010) is a common practice of insurers accepting underwriting risk in hurricane-prone countries such as the United States.

Because Paragraph 16 of Board Notice 158 (Financial Services Board, 2014) requires insurers to have an explicit underwriting risk management policy in place, insurers' perception could be challenged on the importance of this aspect in preparing for the Solvency Assessment and Management requirements.

5.4.6 Remuneration policy

The results indicated that there was no significant relationship between insurers having a remuneration policy in place and assessing themselves as ready to comply with the Solvency Assessment and Management requirements. This result is different from the OECD (2011) guidelines on insurance governance, namely that a compensation policy should be established as the basis for compensation arrangements.

These results are considered further in terms of the features of the remuneration policy.

5.4.6.1 Governance oversight of remuneration policy

The **life** insurers' results indicated that there was no significant relationship between the life insurers having governance oversight of remuneration policy in place and assessing themselves as ready for the Solvency Assessment and Management requirements. In terms of Paragraph 9(a) of Board Notice 158 (Financial Services Board, 2014), a remuneration committee must develop an appropriate remuneration policy. Furthermore,

Paragraph 9(b) of Board Notice 158 (Financial Services Board, 2014) stipulates that it is the remuneration committee's responsibility to monitor the implementation of an insurer's remuneration and regularly review the suitability of that policy.

Because oversight of remuneration in accordance with the remuneration policy is among the remuneration committee's key responsibilities, it should be relevant for life insurers to have an established remuneration committee and explicit remuneration policy in place to be ready for the Solvency Assessment and Management requirements.

On the other hand, the **non-life** insurers' results indicated that having governance oversight of remuneration policy in place is associated with non-life insurers assessing themselves as ready for the Solvency Assessment and Management requirements. Therefore, non-life insurers' perception of the existence of a remuneration committee aligns with recently promulgated legislation and the Solvency Assessment and Management requirements.

5.4.6.2 Scope of remuneration policy

The results indicated that there was no significant relationship between insurers' remuneration policy clearly stating to whom it applied and assessing themselves as ready to comply with the Solvency Assessment and Management requirements.

These results is different from what was found in Ashby's (2011) study, namely that one of the weaknesses in the compensation arrangements was the inadequate design of the compensation arrangements. In terms of Paragraph 13(2)(e) of Board Notice 158 (Financial Services Board, 2014), insurers' remuneration policy should provide for a clear, transparent and effective governance structure around remuneration, and the oversight of the policy.

Because legislation makes it compulsory for an insurer to have an effective remuneration policy clearly stating to whom it applies, insurers could be challenged on their perception regarding the importance of this aspect in preparing for the Solvency Assessment and Management requirements.

5.4.6.3 Remuneration alignment

The results indicated that there was no significant relationship between insurers' remuneration policy aligning employee remuneration with company risk and assessing themselves as ready to comply with the Solvency Assessment and Management requirements.

The study by Atluntas *et al.* (2011) indicates that the compensation policy forms the link between shareholder wealth and the value contribution of a manager's decisions to the business. When designed appropriately, this compensation policy will align the shareholder interest in wealth creation and the manager interest in financial reward. This is similar to the recently promulgated requirements on the remuneration policy set out in Paragraph 13(2)(a) of Board Notice 158 (Financial Services Board, 2014), stating that an insurer's remuneration policy must not induce excessive or inappropriate risk taking and be consistent with the long-term interests of the insurer and the interest of its policyholders.

It therefore should be relevant for insurers to have a remuneration policy that align employee remuneration with company risk when assessing their readiness for the Solvency Assessment and Management requirements.

5.5 BUSINESS CONTINUITY

The results indicated that there was no significant relationship between **life** and **non-life** insurers having a business continuity plan in place and assessing themselves as ready to comply with the Solvency Assessment and Management requirements.

Business continuity planning is considered good business practice to keep the insurer as a going concern should an unforeseen and significant event occur that disrupts the daily operations of an insurer. According to the Institute of Internal Auditors (2014:2), a well-defined Business Continuity Management plan is like an insurance policy for the organization - it helps to ensure that the organization will continue to be viable and meet

stakeholder expectations. The Institute of Internal Auditors (2014) further states that business continuity management is the process followed by an organisation to restore critical operational activities following a significant disruption to the business.

The Institute of Internal Auditors (2014) advises that the internal audit function in an insurance company must have the necessary skills and expertise to contribute to the development, implementation and assessment of a business continuity management plan. Furthermore, it advises that the role of the internal audit should continue contributing assurance and advisory services to the business continuity management. This aligns with the three lines of defence model where the internal audit function, as the third line of defence, plays a supporting role to ensure the effectiveness of risk management processes (Institute of Internal Auditors, 2013).

In the event of business continuity plan failure, there is a possibility of insurer failure, which will activate the resolution plans on the business rescue of an insurer. Kelly *et al.* (2012) explain that the distress resolution framework is an important but generally neglected component of the regulatory design in the global financial crisis. The study found ineffective resolution frameworks to be one of the weakest links in most national financial sector stability frameworks. Much of the Canadian regulator's success during the financial crisis was attributed to having a formalised distressed resolution plan in case failure cannot be prevented.

The recently promulgated requirements as set out in Paragraph 10(3)(f) of Board Notice 158 (Financial Services Board, 2014) require the risk management system to include processes for ensuring adequate contingency planning, business continuity and crisis management. It therefore should be relevant for insurers to have a business continuity plan in place when assessing their readiness for the Solvency Assessment and Management requirements.

5.6 CONCLUSION

The results from the analysis of individual relationships for life insurers indicated that there was a relationship between the life insurers having in place a risk management system

that documented the risk management strategy, an explicit asset-liability management policy, an investment policy and a risk transfer policy and assessing themselves as ready for the Solvency Assessment and Management requirements.

For non-life insurers, the results indicated that there was a relationship between the non-life insurers having in place a risk management system that documented the risk management strategy, an explicit asset-liability management policy, a risk transfer policy and governance oversight of remuneration policy and assessing themselves as ready for the Solvency Assessment and Management requirements.

Some findings are different compared to results from other studies. Firstly, both life and non-life insurers' results indicated that there was no significant relationship between the insurers having a remuneration policy in place and assessing themselves as ready for the Solvency Assessment and Management (SAM) requirements, while literature highlights the importance of governance for compensation following the global financial crises. Secondly, life and non-life insurers' perceptions of having a business continuity plan in preparation for the SAM requirements are different compared to other similar studies. Thirdly, life insurers' perception of having a risk management system in preparation for the SAM requirements contradicts other similar studies. Fourthly, non-life insurers' perceptions of having documented risk management policies in preparation for the SAM requirements are different compared to similar studies.

Chapter 6 concludes with assessing the impact of regulatory changes on the role of risk management in insurance companies.

CHAPTER 6: CONCLUSION

6.1 SUMMARY OF FINDINGS

The secondary data obtained from the Pillar II Readiness Survey was analysed using Pearson's chi-squared test and Fisher's exact test. The results from the analysis of individual relationships for life insurers indicated that there was a relationship between the life insurers having in place a risk management system that documented the risk management strategy, an explicit asset-liability management policy, an investment policy and a risk transfer policy and assessing themselves as ready for the Solvency Assessment and Management requirements.

For non-life insurers, the results showed that there was a relationship between the non-life insurers having in place a risk management system that documented the risk management strategy, an explicit asset-liability management policy, a risk transfer policy and governance oversight of remuneration policy and assessing themselves as ready for the Solvency Assessment and Management requirements.

The results for both life and non-life insurers indicated that there was no significant relationship between the insurers having in place a remuneration policy and a business continuity plan and assessing themselves as ready for the Solvency Assessment and Management requirements. Furthermore, the results indicated that there was no significant relationship for life insurers having in place a risk management system and non-life insurers having in place documented risk management policies and assessing themselves as ready for the Solvency Assessment and Management requirements.

6.2 CONCLUSIONS

Regulation of insurers has evolved over time and is often the result of economic or political forces prompting the change. An example of economic forces acting as catalyst for regulatory evolution was the global financial crisis of 2007 to 2009. The lessons learnt from regulatory regimes that withstood the crisis have been incorporated into regulatory designs

as demonstrated by Solvency II in Europe and Solvency Assessment and Management in South Africa. As part of this regulatory evolution, the importance of robust risk management in an organisation has been highlighted, specifically in an insurance company. In South Africa, the evolution of a robust risk management framework has been embodied by the Financial Services Board in the Solvency Assessment and Management Pillar II risk management requirements for insurers.

In the journey towards implementing Solvency Assessment and Management on 1 January 2016, the Financial Services Board undertook a Pillar II Readiness Survey in 2012 to establish insurers' readiness for the Solvency Assessment and Management requirements. The results from the Pillar II Readiness Survey indicated that 55% of the insurers assessed themselves as ready for the Solvency Assessment and Management requirements, while 45% assessed themselves as not ready.

The outcome of the analysis of individual relationships identified components of the risk management framework that are associated with insurers assessing themselves as ready for the future Solvency Assessment and Management risk management requirements. For both life and non-life insurers, the results indicated that insurers were more likely to assess themselves as ready when they had in place a risk management system that documented the risk management strategy. This result is in line with what was found in a similar study where the majority of the German property-liability insurers had already implemented the enterprise-wide risk management process in preparation for Solvency II.

Other components associated with insurers assessing themselves as ready are insurers who had an explicit asset-liability management policy and a risk transfer policy in place. These components conform to the recently promulgated legislation on the risk management requirements set out in Board Notice 158 (Financial Services Board, 2014). Furthermore, the results indicated that life insurers who had an investment policy in place were more likely to assess themselves as ready. This is supported by the study of the Canadian federal regulator who survived the financial crisis due to governed investment guidelines that resulted in prudent risk taking.

The last component of the risk management framework that is associated with non-life insurers assessing themselves as ready is the existence of governance oversight of remuneration policy. This result conforms to the recently promulgated legislation set out in Board Notice 158 (Financial Services Board, 2014), which requires a remuneration committee to develop an appropriate remuneration policy and monitor the implementation and regular review thereof.

When comparing effective risk management practices described in literature with the risk management practices insurers perceived as relevant to be ready for the Solvency Assessment and Management requirements, a gap was found as shown in the results. Both life and non-life insurers indicated that there was no significant relationship between having a remuneration policy in place and assessing themselves as ready for the Solvency Assessment and Management requirements. This result is in line with prior research that states that the misalignment of compensation practices and company performance was one of the underlying causes of the banking crises.

Other areas where the perceived importance in preparation for the Solvency Assessment and Management requirements is different compared to literature are firstly, life and non-life insurers' perception of having a business continuity plan in place, secondly, life insurers' perception of having a risk management system in place, and lastly, non-life insurers' perception of having documented risk management policies in place. Because these components are a requirement of the recently promulgated Board Notice 158 (Financial Services Board, 2014), it should be relevant to have these components in place when insurers assess their readiness for the Solvency Assessment and Management requirements.

6.3 SUMMARY OF CONTRIBUTIONS

South African insurance companies are channelling existing resources at the consultative process in the Solvency Assessment and Management governance structures to contribute to the development of the Solvency Assessment and Management requirements. As a result, scarce resource time remains to consider the international

evolution of risk management frameworks, compare these frameworks with existing insurer risk management framework and implement changes to enhance the insurers risk management framework. The results of the analysis of individual relationships identified aspects of the insurers existing risk management framework that did not have a significant relationship with insurers assessing themselves as ready for the future Solvency Assessment and Management risk management requirements.

Three key areas forming part of the identified gap are discussed separately. Considering the importance of the remuneration policy first, literature shows that the inadequate design of remuneration arrangements is a key contributing factor to the global financial crisis. Therefore, raising insurer awareness of the importance of having a remuneration policy that transparently governs remuneration arrangements could help prevent a repetition of the global financial crisis.

The perceived unimportance of having a business continuity plan in place is a second area identified in the gap. Having a business continuity plan in place is considered good business practice and plays an important role in the risk management framework because a single event can cause an insurance company to fail. This is in line with recently promulgated legislation on the risk management requirements set out in Board Notice 158 (Financial Services Board, 2014). Therefore, raising insurer awareness about the importance of implementing a business continuity plan will assist insurers to remain a going concern should an unforeseen and significant event that disrupts the daily operations of an insurer occur.

The third and last aspect of the identified gap relates to non-life insurers having documented risk management policies in place. The risk management framework of an insurer can only be embedded if documented. Furthermore, the culture of risk management is best changed through explicit guidance as set out in documented risk management policies. Therefore, raising non-life insurer awareness about the importance of having a documented risk management framework and policies in place should assist with changing the culture and business practices.

6.4 RECOMMENDATIONS FOR FUTURE RESEARCH

Risk management frameworks for insurers are rapidly evolving and therefore a key area for future research could be the comparison of the state of future risk management frameworks with perceptions found in the Solvency Assessment and Management Pillar II Readiness Survey. Such research can potentially focus on the areas identified as currently being a gap, namely remuneration governance, business continuity planning and general level of documentation of the risk management framework and its policies.

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APPENDIX A: SAM PILLAR II READINESS SURVEY QUESTIONNAIRE



SAM Pillar II Readiness Questionnaire

Review of SAM Pillar II Readiness

June 2012

The SAM 2012 update referred to the intent of the FSB to ascertain the development work done by insurers to prepare themselves for Pillar II of the SAM framework. This questionnaire, together with targeted follow-up interviews, is aimed at assessing Pillar II readiness.

SAM Pillar II Readiness

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COMPANY DETAILS

Company Name: Choose an item.

Completed By:

Name: Click here to enter text.

Designation: Click here to enter text.

Contact No: Click here to enter text.

E-mail: Click here to enter text.

Sign Off:

Preparer **Name:** Click here to enter text. **Signature:** _____

Chief Executive Officer **Name:** Click here to enter text. **Signature:** _____

Non-Executive Director **Name:** Click here to enter text. **Signature:** _____

INTRODUCTION AND BACKGROUND

The SAM Pillar II readiness review is aimed at aiding insurers with their SAM Pillar II implementation and understanding. The review cannot, however, serve as a definitive template to guarantee full compliance with SAM requirements. More particularly, participants are reminded of the following limitations:

- The review questionnaire has been prepared on a basis for use by all regulated insurers. As such, it does not take into account an insurer's specific strategies, business model, operational structure and unique risks. To ensure accurate and comprehensive adherence to SAM principles, insurers should therefore develop their own methods, using the FSB's review as guidance only.
- Insurers must take care not to regard the questions asked in the review as an exhaustive checklist of the areas the FSB will focus on in monitoring and assessing SAM delivery. What is most important is that each insurer can provide a narrative of how SAM objectives are embedded within the insurer, and be able to demonstrate this through insurer-specific evidence of achievement of the SAM outcomes.
- Insurers themselves manage SAM readiness assessment. It is essential to bear in mind that, before an insurer (or the regulator) can place any reliance on the assessment, every response provided must be capable of being substantiated by measurable management information or other objective supporting evidence.
- The SAM regulatory regime is currently in a developmental phase and requirements will only be finalised at a future date. Consequently, the questionnaire is based on a combination of current legislation, Solvency II principles and guidelines, the Insurance Laws Amendment Bill (draft) and the various SAM discussion documents and position papers (available on the SAM website) relating to Pillar II.

INSTRUCTIONS TO READINESS REVIEW PARTICIPANTS

The structure of the readiness questionnaire

The questionnaire is structured around Pillar 2 likely requirements, with particular emphasis on the elements of the SAM framework. The questionnaire consists of seven parts. Within each part there are specific questions relating to the Pillar 2 likely requirements followed by a self-assessment.

These questions are designed to obtain insights into the processes your company currently has in place to achieve its SAM objectives and commitments, and consist of both multiple choice and open questions. Please indicate your responses to the multiple choice questions on a %Yes+, %No+, %Partially+ or %Not Applicable+ basis by selecting the appropriate response from the drop-down box. The answers to these questions may be further probed in the planned interviews that will follow on a sample basis.

If your company currently has not explicitly or fully implemented the identified areas, then we would appreciate your view on how you intend to do so in future as well as the timing of future plans, or, where relevant, why you believe these areas do not apply to you. This detail can be supplied under section 3 in each of the parts.

Under each part, section 4 allows insurers to make any suggestions they may have around the practical application of the principle of proportionality, specifically how SAM principles can be applied to small, niche insurers as well as complex insurance groups.

A few general questions are included at the end of the questionnaire, as well as a request for feedback on the usefulness of the questionnaire.

Completing the questionnaire

When completing the questionnaire, please -

- Answer frankly and objectively. We are interested in your experience, views and suggestions. This is not a %compliance report+.
- Answer all questions. Where you believe a question is not applicable to your company, please say so.

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Participation by different entities of a group

The questionnaire needs to be completed at an insurance licence level. If there is more than one insurance company in a Group, then separate questionnaires have to be completed for each licenced entity.

However, where processes or structures are in place that apply group-wide or across multiple parts of the business, please point this out in your answers.

Submitting the completed questionnaire

Your response/s to the questionnaire should be submitted by 31 July 2012. Please ensure that they are e-mailed, both as Word and scanned PDF documents containing the signatures as specified below, to SAM.Pillar2readiness@fsb.co.za .

Please ensure that the response to the questionnaire is signed by the Chief Executive Officer as well as a non-executive director of the insurer.

A: Assessment – Composition of the board of directors

The SAM regime is likely to require companies to comply with requirements in relation to the composition of the board, the structure of the board, board committees and the duties of directors. These requirements may well be in addition to those contained in the Companies Act and could, inter alia, provide for the board of directors

- to consist of a sufficient number of non-executive and independent directors to promote objectivity in decision making
- to be chaired by an independent director
- to assess to what extent the establishment of board committees is necessary and
- to be accountable for the effective governance of the company.

For the purposes of this section,

- a non-executive director means a person who is not involved in the day-to-day management of the insurer and
- an independent director means a non-executive director who is free from any business or other association that could materially interfere with the exercise of independent judgement.

A.1. Questions	Y / N / P / NA
1.1. In your view, does the composition of the board of directors promote adequate objectivity in decision making?	Choose an item.

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<p>1.2. If the answer to question 1.1 is either %yes+or+%partially+please describe the company's policy with respect to ensuring that the board composition promotes objective decision-making.</p> <p>Click here to enter text.</p>	
<p>1.3. In your view, does the board of directors of your company possess an appropriate number and mix of individuals with the range and level of expertise necessary to understand and oversee the implementation of the SAM framework, and to monitor the SAM requirements on an on-going basis, taking into account the nature, scale and complexity of the business?</p>	<p>Choose an item.</p>
<p>1.4. If the answer to question 1.3 is yes, please provide reasons for this observation, including evidence of qualifications, experience or training initiatives.</p> <p>Click here to enter text.</p>	
<p>1.5. In your answer to question 1.3, do you apply the test in respect of the competence of directors on SAM requirements at the level of each individual or at the level of the board of directors as a collective? What level of understanding of SAM requirements is expected of each and every board member?</p> <p>Click here to enter text.</p>	
<p>1.6. Does the company's board of directors currently consist of a majority of non-executive directors?</p>	<p>Choose an item.</p>
<p>1.7. Are the majority of non-executive directors independent directors?</p>	<p>Choose an item.</p>
<p>1.8. Is the current chairperson of the company's board of directors an independent director?</p>	<p>Choose an item.</p>

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1.9. Is the company's CEO an executive board member?	Choose an item.
1.10. Is the CFO of the company an executive board member?	Choose an item.
1.11. Are there any other executive board members?	Choose an item.
1.12. If yes to question 1.11, please provide details. Click here to enter text.	
1.13. Does the board currently have the following separate board committees:	
1.13.1. An audit committee?	Choose an item.
1.13.2. A risk committee?	Choose an item.
1.13.3. A remuneration committee?	Choose an item.
1.14. Are there any other board committees? If yes, please provide details. Click here to enter text.	
1.15. Are any of the audit, risk or remuneration committees combined?	Choose an item.
1.16. If yes to question 1.15, please provide details and a motivation as to why the board structure is appropriate to the nature, scale and complexity of	

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<p>the business.</p> <p>Click here to enter text.</p>	
1.17. Does the board review, at least annually, its performance collectively and that of each director individually?	Choose an item.
<p>1.18. If yes to question 1.17, briefly describe the process and the outcome of the most recent review.</p> <p>Click here to enter text.</p>	
1.19. Is the audit committee chaired by an independent director?	Choose an item.
1.20. Is the chairman of the audit committee elected by the board of directors?	Choose an item.
1.21. Are all members of the audit committee non-executive directors?	Choose an item.
1.22. Has any member of the audit committee been employed by the company or a significant shareholder during the past five years? If yes, please provide details below.	Choose an item.
<p>Click here to enter text.</p>	
1.23. Has any member of the audit committee in the last three years been employed or affiliated to external service providers such as auditors, consulting actuaries or legal advisors? If yes, please provide details below.	Choose an item.
<p>Click here to enter text.</p>	

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1.24. The audit committee	
1.24.1. Reviews all financial information prior to external publication	Choose an item.
1.24.2. Monitors and reports on independence of the external auditor	Choose an item.
1.24.3. Defines a policy for the performance of non-audit services by external auditors	Choose an item.
1.24.4. Is informed of all reportable irregularities and monitors corrective action	Choose an item.
1.24.5. Assesses the effectiveness of external audit annually	Choose an item.
1.24.6. Assesses the effectiveness of internal audit annually	Choose an item.
1.24.7. Approves the internal and external audit plans	Choose an item.
1.24.8. Annually reviews the effectiveness of the finance and actuarial functions.	Choose an item.

A.2. Self-assessment:

Based on the responses above, please indicate your own assessment of your company's current compliance with the likely SAM requirements.

- Weak**
- Needs Improvement**
- Acceptable**
- Strong**

A.3. Future initiatives

If any of the above responses are rated **no** or **partially**, or if your overall self-assessment is **weak** or **needs improvement**, please indicate the reasons that contribute to the response and what future plans the company has in place to address these areas for improvement, as well as the timeframe to deliver on these initiatives. Please elaborate below on the reasons and future initiatives and please also cross-reference the comments to the questions it relates to.

[Click here to enter text.](#)

A.4. Principle of proportionality

1. Please comment on any suggestions the company may have as to how the principle of proportionality can be applied in finalising the detailed requirements of this aspect of the SAM Governance framework, or in the practical implementation of the requirements, specifically for small or niche insurers.

[Click here to enter text.](#)

2. Please comment on suggestions the company may have as to how the requirements with respect to this aspect of the SAM Governance Framework can be practically applied in the case of Insurance Groups.

[Click here to enter text.](#)

B: Assessment – Board functions

The SAM regime is likely to require companies to comply with requirements relating to the duties of the board of directors as well as fit and proper requirements in relation to the board of directors, heads of control functions, senior management, persons to whom a control function is outsourced and significant owners of the company.

For purposes of this section, fit and proper requirements means, amongst others,

- In relation to a director, senior management and key persons in control functions, qualities of competence, qualifications, knowledge and integrity
- In relation to a person to whom a control function is outsourced, qualities of competence and integrity
- In relation to significant owners qualities of integrity and financial standing.

B.1. Questions	Y / N / P / NA
1.1. Are the roles and responsibilities of the board captured in a board mandate, a board charter or other similar written document?	Choose an item.
1.2. The roles and responsibilities of the board of directors, inter alia, currently are to:	
1.2.1. Determine and oversee the implementation of the company's business objectives	Choose an item.

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1.2.2.Ensure that there is appropriate separation of oversight function from management responsibility	Choose an item.
1.2.3.Provide oversight in respect of the design and implementation of sound risk management and internal control systems and functions	Choose an item.
1.2.4.Regularly evaluate the adequacy and effectiveness of the company's governance framework.	Choose an item.
1.3. Are there board approved policies, processes and procedures in place to ensure reliable and transparent reporting for public and supervisory purposes?	Choose an item.
<p>1.4. If yes to question 1.3, please describe how the board ensures that these are effective.</p> <p>Click here to enter text.</p>	
1.5. Does the board of directors determine and oversee the implementation of a succession plan for senior management?	Choose an item.
1.6. Is the board of directors responsible for IT governance which is embodied in an IT charter?	Choose an item.
1.7. Does the board of directors have a fit and proper policy in place?	Choose an item.
<p>1.8. If yes to question 1.7, briefly describe the fit and proper policy.</p> <p>Click here to enter text.</p>	
1.9. Briefly describe the process followed by the board to ensure its fit and proper policy is effective.	

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Click here to enter text.

If yes to question 1.7, does the policy apply to

1.9.1.The board of directors?	Choose an item.
1.9.2.Senior management?	Choose an item.
1.9.3.Heads of control functions?	Choose an item.
1.9.4.Persons to whom a control function is outsourced?	Choose an item.
1.9.5.Significant owners of the company?	Choose an item.

B.2. Self-assessment:

Based on the responses above, please indicate your own assessment of your company's current compliance with the likely SAM requirements.

- Weak**
- Needs Improvement**
- Acceptable**
- Strong**

B.3. Future initiatives

If any of the above responses are rated %no+ or %partially+, or if your overall self-assessment is %weak+ or %needs improvement+, please indicate the reasons that contribute to the response and what future plans the company has in place to address these areas for improvement, as well as the timeframe to deliver on these initiatives. Please elaborate below on the reasons and future initiatives and please also cross-reference the comments to the questions it relates to.

[Click here to enter text.](#)

B.4. Principle of proportionality

1. Please comment on any suggestions the company may have as to how the principle of proportionality can be applied in finalising the detailed requirements of this aspect of the SAM Governance framework, or in the practical implementation of the requirements, specifically for small or niche insurers.

[Click here to enter text.](#)

2. Please comment on suggestions the company may have as to how the requirements with respect to this aspect of the SAM Governance Framework can be practically applied in the case of Insurance Groups.

[Click here to enter text.](#)

C: Assessment – Risk management

The SAM regime is likely to, inter alia, require companies to

- Establish an effective risk management system
- Develop and regularly review written risk management policies
- Develop and implement an explicit remuneration policy
- Establish and maintain quantitative and qualitative risk tolerance levels and
- Undertake their own risk and solvency assessment to assess the adequacy of its risk management system and also its current and likely future financial soundness position (refer to section D).

C.1. Questions	Y / N / P / NA
1.1. Does the company currently have a risk management system in place? If yes, please answer questions 1.2 to 1.3 below. If no, please proceed to question 1.4.	Choose an item.
1.2. Does the risk management system document the risk management strategy, including:	
1.2.1. Risk management principles and approach to actuarial assumption setting?	Choose an item.

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1.2.2. Assign risk management responsibilities across all activities of the company?	Choose an item.
1.2.3. Specify the processes and procedures for identifying, measuring, monitoring, managing and reporting on material risks?	Choose an item.
1.2.4. Specify reports to inform senior management and the board of material risks?	Choose an item.
1.3. Is the risk management system reviewed regularly by the company's internal audit function or an objective external reviewer?	Choose an item.
1.4. Does the company have risk management policies? If yes, please answer question 1.5. If no, please proceed to question 1.6.	Choose an item.
1.5. Do the risk management policies include	
1.5.1. An explicit asset-liability management policy?	Choose an item.
1.5.2. An explicit investment policy?	Choose an item.
1.5.3. An explicit reinsurance and other forms of risk transfer policy?	Choose an item.
1.5.4. An explicit remuneration policy?	Choose an item.
1.5.5. Explicit policies in relation to underwriting risk?	Choose an item.
1.6. If the company has an explicit remuneration policy, please answer the following questions:	

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1.6.1.Does the board of directors or one of its committees oversee and implement the remuneration policy?	Choose an item.
1.6.2.Does the policy clearly states to whom it applies?	Choose an item.
1.6.3.Do deferred components of remuneration align with the time horizons of risk?	Choose an item.
<p>1.6.4.Please describe how the remuneration policy is designed to avoid incentives for excessive risk taking.</p> <p>Click here to enter text.</p>	
<p>1.7. What are the material risk categories identified and monitored by the board of directors? Please provide details.</p> <p>Click here to enter text.</p>	
<p>1.8. Please describe the approach of the board of directors to set acceptable risk limits for each type of risk.</p> <p>Click here to enter text.</p>	
<p>1.9. Please describe how the board of directors set the strategic goals and objectives of the company ensuring that these are aligned with the risk strategy and risk appetite.</p> <p>Click here to enter text.</p>	
<p>1.10. Please describe the procedures the board of directors have in place to assess the effectiveness of management against agreed performance and risk appetite criteria.</p>	

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Click here to enter text.	
1.11. Please describe the processes in place to produce management information reports, an overview of the information included in the reports and the frequency with which the reports are produced to monitor compliance with the set risk limits.	
Click here to enter text.	
1.12. Please describe the processes in place for identifying and reporting transgressions from risk limits to senior management and the board of directors.	
Click here to enter text.	
1.13. Does the company have a contingency and business continuity plan in place?	Choose an item.

C.2. Self assessment:

Based on the responses above, please indicate your own assessment of your company's current compliance with the likely SAM requirements.

- Weak**
- Needs Improvement**
- Acceptable**
- Strong**

C.3. Future initiatives

If any of the above responses are rated %no+or %partially+, or if your overall self-assessment is %weak+or %needs improvement+, please indicate the reasons that contribute to the response and what future plans the company has in place to address these areas for improvement, as well as the timeframe to deliver on these initiatives. Please elaborate below on the reasons and future initiatives and please also cross-reference the comments to the questions it relates to.

[Click here to enter text.](#)

C.4. Principle of proportionality

1. Please comment on any suggestions the company may have as to how the principle of proportionality can be applied in finalising the detailed requirements of this aspect of the SAM Governance framework, or in the practical implementation of the requirements, specifically for small or niche insurers.

[Click here to enter text.](#)

2. Please comment on suggestions the company may have as to how the requirements with respect to this aspect of the SAM Governance Framework can be practically applied in the case of Insurance Groups.

[Click here to enter text.](#)

D: Assessment – Own risk and solvency assessment

The SAM regime is likely to require companies to undertake its own risk and solvency assessment (ORSA) to assess the adequacy of its risk management system and also its current and likely future financial soundness position. The ORSA must

- cover at least all foreseeable and relevant material risks
- take into account the specific risk profile of the company bearing in mind its business strategy
- identify differences between the company's risk profile and those underlying the assumptions in the solvency capital requirement (SCR) calculated on the standard formula or its approved internal or partial internal model
- cover a time horizon in excess of the typical time horizon used for statutory capital requirements.

D.1. Questions	Y / N / P / NA
1.1. Does the company currently produce an ORSA? If yes, please answer question 1.2 to 1.11. If no, please proceed to question 1.12 and 3 below.	Choose an item.
1.2. Please describe the Board's involvement with the ORSA. Click here to enter text.	
1.3. How often is the ORSA updated and reviewed particularly for changes in circumstances or strategy?	

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[Click here to enter text.](#)

1.4. The time horizon for forward looking information in the ORSA is

1.4.1. One year

Choose an item.

1.4.2. Two years

Choose an item.

1.4.3. Three years

Choose an item.

1.4.4. Five years

Choose an item.

1.4.5. Longer

Choose an item.

1.5. Is the ORSA periodically independently reviewed?

Choose an item.

1.6. The ORSA covers the following risks

1.6.1. Underwriting and insurance risk

Choose an item.

1.6.2. Market risk

Choose an item.

1.6.3. Credit risk

Choose an item.

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1.6.4.Liquidity risk	Choose an item.
1.6.5.Operational risk	Choose an item.
1.6.6.Reputational and strategic risk	Choose an item.
1.6.7.Other . please specify Click here to enter text.	Choose an item.
1.7. Please describe how the ORSA is embedded in the organisation and how it is aligned to or informs business strategy. Click here to enter text.	
1.8. Is it a requirement for the approval of a business case, project or new product motivation that it should consider solvency implications? If yes, please elaborate. Click here to enter text.	Choose an item.
1.9. Please describe the stressed scenarios used in the ORSA and which risks are covered. Click here to enter text.	
1.10. If the standard solvency formula is used for the ORSA, please describe the process to ensure that the standard formula is relevant to the particular risk profile and risk appetite of the company.	

Click here to enter text.

1.11. If an internal model or partial internal model is used for the ORSA, how are the variances between ORSA and the standard formula identified and explained?

Click here to enter text.

1.12. If the answer to question 1.1 is %No+, please describe what other processes the board of directors follows to ensure that it has a comprehensive view on an entity-wide basis of all current risks as well as future or anticipated risks that may flow from the medium to longer-term strategic objectives of the company.

Click here to enter text.

D.2. Self assessment:

Based on the responses above, please indicate your own assessment of your company's current compliance with the likely SAM requirements.

- Weak**
- Needs Improvement**
- Acceptable**
- Strong**

D.3 Future initiatives

If any of the above responses are rated %no+or %partially+, or if your overall self-assessment is %weak+or %needs improvement+, please indicate the reasons that contribute to the response and what future plans the company has in place to address these areas for improvement, as well as the timeframe to deliver on these initiatives. Please elaborate below on the reasons and future initiatives and please also cross-reference the comments to the questions it relates to.

[Click here to enter text.](#)

D.4. Principle of proportionality

1. Please comment on any suggestions the company may have as to how the principle of proportionality can be applied in finalising the detailed requirements of this aspect of the SAM Governance framework, or in the practical implementation of the requirements, specifically for small or niche insurers

[Click here to enter text.](#)

2. Please comment on suggestions the company may have as to how the requirements with respect to this aspect of the SAM Governance Framework can be practically applied in the case of Insurance Groups.

[Click here to enter text.](#)

E: Assessment – Internal control

The SAM regime is likely to require companies to, as part of its governance framework, establish, maintain and operate within an effective internal control system to assist the board of directors and senior management in their oversight and management responsibilities. The internal control system must be appropriate to the nature, scale and complexity of the company's business and risks.

E.1. Questions	Y / N / P / NA
1.1. The company's internal control system covers	
1.1.1.Key processes and procedures across the whole company	Choose an item.
1.1.2.IT processes	Choose an item.
1.1.3.Financial and actuarial reporting	Choose an item.
1.1.4.Data accuracy	Choose an item.
1.1.5.Compliance with the laws and regulations applicable to the company.	Choose an item.
1.2. A centralised written inventory exists of company-wide key processes, policies and associated risk exposures with related internal controls addressing those risks.	Choose an item.

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1.3. The adequacy, completeness and effectiveness of the internal control system are regularly independently tested.	Choose an item.
1.4. The board of directors or a committee of the board is regularly informed of the effectiveness of the control environment.	Choose an item.
1.5. Responses to control weaknesses identified are monitored and the implementation of corrective measures is validated.	Choose an item.
<p>1.6. Has the company during the past four years experienced significant breakdowns in internal controls, calculation errors in technical provisions or inaccuracies in financial or regulatory reporting, non-compliance with solvency requirements, fraud or reportable irregularities that were not pro-actively identified by control functions and reported to the board of directors? If yes, please provide details.</p> <p>Click here to enter text.</p>	Choose an item.

E.2. Self assessment:

Based on the responses above, please indicate your own assessment of your company's current compliance with the likely SAM requirements.

- Weak**
- Needs Improvement**
- Acceptable**
- Strong**

E.3. Future initiatives

If any of the above responses are rated %no+ or %partially+, or if your overall self-assessment is %weak+ or %needs improvement+, please indicate the reasons that contribute to the response and what future plans the company has in place to address these areas for improvement, as well as the timeframe to deliver on these initiatives. Please elaborate below on the reasons and future initiatives and please also cross-reference the comments to the questions it relates to.

[Click here to enter text.](#)

E.4. Principle of proportionality

1. Please comment on any suggestions the company may have as to how the principle of proportionality can be applied in finalising the detailed requirements of this aspect of the SAM Governance framework, or in the practical implementation of the requirements, specifically for small or niche insurers.

[Click here to enter text.](#)

2. Please comment on suggestions the company may have as to how the requirements with respect to this aspect of the SAM Governance Framework can be practically applied in the case of Insurance Groups.

[Click here to enter text.](#)

F: Assessment – Control functions

The SAM regime is likely to require companies to establish the following control functions with a head of each of the control functions:

- A risk management function
- A compliance function
- An actuarial control function and
- An internal audit function.

F.1. Questions	Y / N / P / NA
1.1. Does the company currently have the following control functions (at solo insurer level rather than group level)?	
1.1.1.A risk management function	Choose an item.
1.1.2.A compliance function	Choose an item.
1.1.3.An internal audit function.	Choose an item.
1.2. Does the company have an actuarial control function responsible for the independent review of actuarial assumptions and	Choose an item.

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methodologies, which is separate from the actuarial function responsible for performing the calculations?	
1.3. Are the functions of the statutory actuary confined to independent review of actuarial assumptions, methodologies and calculations (ie he/she does not involve him/herself in the actual setting of assumptions and technical provisions)?	Choose an item.
1.4. Are any of the control functions combined at solo insurer level? If yes, please provide details. Click here to enter text.	Choose an item.
1.5. Has the company appointed a head for each of the control functions?	Choose an item.
1.6. Has a person been appointed as head of more than one control function at solo insurer level? If yes, please provide details. Click here to enter text.	Choose an item.
1.7. Are any of the control functions outsourced, either to external parties or within the group? If yes, please provide details. Click here to enter text.	Choose an item.
1.8. If yes to question 1.7, please describe how the board of directors satisfies itself that the outsourcing of a control function will not interfere with the functions independence, objectivity or effectiveness. Click here to enter text.	
1.9. Are control functions other than internal audit regularly reviewed by internal audit?	Choose an item.

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1.10. If yes to question 1.9, is the review done	
1.10.1. Annually?	Choose an item.
1.10.2. Every second year?	Choose an item.
1.10.3. Longer?	Choose an item.
1.11. Is the internal audit function regularly reviewed by an objective external reviewer?	
Choose an item.	
1.12. If yes to question 1.11, is the review done	
1.12.1. Annually?	Choose an item.
1.12.2. Every two years?	Choose an item.
1.12.3. Longer?	Choose an item.
1.13. Does the board of directors, taking into account the reviews in 1.9 and 1.11 above, regularly review the performance of each control function?	
Choose an item.	
1.14. Is the appointment, performance assessment and remuneration of heads of control functions, other than the head of the internal audit function, done with the approval or consultation with the board of directors or relevant board committee?	
Choose an item.	
1.15. Is the appointment, performance assessment and remuneration of the head of the internal audit function, done by the board of	
Choose an item.	

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directors, its chairperson or the audit committee?	
<p>1.16. Do the heads of control functions report to the CEO? If no, please provide details of the reporting lines of heads of control functions.</p> <p>Click here to enter text.</p>	Choose an item.
<p>1.17. Do the heads of control functions have direct access to the board of directors or a board committee?</p>	Choose an item.
<p>1.18. If the company is part of a group and if solo entities utilise control functions that operate at a group level, please provide detail of the functioning of control functions and specifically how SAM requirements are being satisfied at a solo entity level.</p> <p>Click here to enter text.</p>	

F.2. Self assessment:

Based on the responses above, please indicate your own assessment of your company's current compliance with the likely SAM requirements.

- Weak**
- Needs Improvement**
- Acceptable**
- Strong**

F.3. Future initiatives

If any of the above responses are rated %no+ or %partially+, or if your overall self-assessment is %weak+ or %needs improvement+, please indicate the reasons that contribute to the response and what future plans the company has in place to address these areas for improvement, as well as the timeframe to deliver on these initiatives. Please elaborate below on the reasons and future initiatives and please also cross-reference the comments to the questions it relates to.

[Click here to enter text.](#)

F.4. Principle of proportionality

1. Please comment on any suggestions the company may have as to how the principle of proportionality can be applied in finalising the detailed requirements of this aspect of the SAM Governance framework, or in the practical implementation of the requirements, specifically for small or niche insurers.

[Click here to enter text.](#)

2. Please comment on suggestions the company may have as to how the requirements with respect to this aspect of the SAM Governance Framework can be practically applied in the case of Insurance Groups.

[Click here to enter text.](#)

G: Assessment – Outsourcing

The SAM regime is likely to require an insurer to, as part of its governance framework, establish and operate in compliance with an outsourcing policy approved by the board of directors where a material function or activity has been outsourced. Such an outsourcing policy should include the remuneration payable to the providers of the function or activity as well as the governance that would apply. An insurer may not outsource a function or activity if that outsourcing may

- Materially increase the risk to the insurer
- Materially impair the governance framework of the insurer
- Impair the ability of the Registrar to monitor compliance with regulatory requirements or
- Compromise the fair treatment of policyholders.

A material function includes any function that has the potential, if disrupted, to have a significant impact on the insurer's insurance business operations or ability to manage risks effectively.

G.1. Questions	Y / N / P / NA
1.1. Does your company have an outsourcing policy in place that complies with the provisions of Directive 159.A.i?	Choose an item.
1.2. Is all outsourcing of control, management or material functions approved by the board of directors prior to entering into outsourced arrangements?	Choose an item.

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1.3. Are all material outsourced functions or activities governed by a written contract?	Choose an item.
1.4. Does the board of directors and senior management retain oversight and operational responsibility for all material outsourced activities or functions?	Choose an item.
1.5. Are all material outsourced activities or functions subject to the same governance principles and governance frameworks as if it was internal?	Choose an item.
1.6. Is the remuneration paid in respect of outsourced control functions	
1.6.1.assessed against the remuneration policy of the company?	Choose an item.
1.6.2.commensurate with the actual function or activity outsourced?	Choose an item.
1.7. Do outsourcing contracts make provision for access by the insurer and the FSB in respect of data, documentation and all other relevant items?	Choose an item.
1.8. Do outsourcing contracts make provision for the FSB to supervise the activities of the service provider insofar as it relates to the insurer?	Choose an item.
1.9. Are any management or material functions outsourced?	Choose an item.
1.10. If yes to question 1.9, please provide details. Click here to enter text.	

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<p>1.11. Are any activities or functions outsourced to entities that are affiliated to other service providers such as external auditors or legal advisors?</p>	<p>Choose an item.</p>
<p>1.12. If yes to question 1.11, please provide details.</p> <p>Click here to enter text.</p>	
<p>1.13. Are any activities or functions outsourced to entities that are part of the same group of companies or part of the holding company or affiliated to significant shareholders?</p>	<p>Choose an item.</p>
<p>1.14. If yes to question 1.13, please provide details.</p> <p>Click here to enter text.</p>	

G.2. Self assessment:

Based on the responses above, please indicate your own assessment of your company's current compliance with the likely SAM requirements.

- Weak**
- Needs Improvement**
- Acceptable**
- Strong**

G.3. Future initiatives

If any of the above responses are rated %no+ or %partially+, or if your overall self-assessment is %weak+ or %needs improvement+, please indicate the reasons that contribute to the response and what future plans the company has in place to address these areas for improvement, as well as the timeframe to deliver on these initiatives. Please elaborate below on the reasons and future initiatives and please also cross-reference the comments to the questions it relates to.

[Click here to enter text.](#)

G.4. Principle of proportionality

1. Please comment on any suggestions the company may have as to how the principle of proportionality can be applied in finalising the detailed requirements of this aspect of the SAM Governance framework, or in the practical implementation of the requirements, specifically for small or niche insurers.

[Click here to enter text.](#)

2. Please comment on suggestions the company may have as to how the requirements with respect to this aspect of the SAM Governance Framework can be practically applied in the case of Insurance Groups.

[Click here to enter text.](#)

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H: General

1. Please indicate whether the responses to this questionnaire have been discussed with the chairman of the board of directors, the chairman of the audit committee or the chairman of the risk committee.

[Click here to enter text.](#)

2. Please comment briefly on the extent to which the company has employed the services of external service providers to assist with SAM implementation generally and specifically in relation to SAM Pillar II requirements.

[Click here to enter text.](#)

3. Has the questionnaire been useful in enabling the company to evaluate its progress towards SAM Pillar II readiness? Please elaborate.

[Click here to enter text.](#)

4. Please comment on any other matters the company would like to bring to the attention of the FSB as it relates to SAM Pillar II.

[Click here to enter text.](#)