Changes in External Accounting Framework
and its impact on Asset & Liability Management

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ABSTRACT
Title: Changes in External Accounting Framework and its impact on Asset & Liability Management
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Purpose: The purpose of this investigation is to contribute to the understanding of how changes in the external accounting framework impacts an insurance company’s asset and liability management focusing on the asset side and credit risks.

Method: This study has an actor’s approach. The theory and the empirical data have been approached consistently with the help of the model I designed. The design of the study is a case study with a qualitative approach using semi-structured interviews. When collecting and analysing the empirical material the study has been influenced by a qualitative approach.

Result & Conclusions: The study indicates that the insurance sector is using economic and solvent risk based valuations to manage and steer their business to profitability. This study has clearly shown that reality mirrors the theory. However due to the volatility of the insurance market, stress testing supports the ALM requirements which is at the heart of an insurance company.

Suggestions for future research: A suggestion would be to focus on internal controls used to implement such changes in external accounting frameworks which impact management accounting. Such a focus would possibly be quite interesting to study and develop further.

Contributions of the thesis: This study contributed to how changes in the external accounting framework impacts an insurance company’s asset and liability management focusing on the asset side and credit risks. The study offers an appropriate setting to address the purpose, considering insurance companies have experienced significant changes that affect those factors in future years.

Key words: changes in the external accounting framework, asset and liability management, asset allocation, credit risk
# Table of Contents

1. Introduction .......................................................................................................................... 5  
   1.1 Background ...................................................................................................................... 5  
   1.2 Problem Discussion ......................................................................................................... 6  
   1.3 Purpose ............................................................................................................................. 9  
   1.4 Limitation ......................................................................................................................... 9  

2. Methodology .......................................................................................................................... 10  
   2.1 Methodological basis ...................................................................................................... 10  
      2.1.1 Research strategies .................................................................................................. 10  
      2.1.2 Exploratory studies ............................................................................................... 10  
      2.1.3 Qualitative research .............................................................................................. 11  
   2.2 Scientific Approach ........................................................................................................ 12  
      2.2.1 Actor’s approach .................................................................................................. 13  
   2.3 Qualitative Approach ..................................................................................................... 14  
   2.4 Primary data ................................................................................................................... 14  
   2.5 Literature collection ....................................................................................................... 15  
      2.5.1 Text Books ............................................................................................................ 15  
      2.5.2 Scientific articles ................................................................................................. 16  
   2.6 Source Criticism ............................................................................................................. 16  
   2.7 Data Collection ............................................................................................................... 17  
      2.7.1 Selection ................................................................................................................. 18  
      2.7.2 Interviews ............................................................................................................... 19  
      2.7.3 Interview Questions .............................................................................................. 20  
      2.7.4 Interview Documentation ...................................................................................... 21  

3. Theoretical Framework ....................................................................................................... 23  
   3.1 Choice of Theory ............................................................................................................ 23  
   3.2 Changes in External Accounting Framework ................................................................ 23  
   3.3 Asset Liability Management ......................................................................................... 26  
   3.4 Asset Allocation ............................................................................................................. 27  
   3.5 Credit Risk ...................................................................................................................... 29  
   3.6 Theory Conclusion ......................................................................................................... 31
4. Empirical Study .................................................................................................................. 34
  4.1 Interviewees ................................................................................................................... 34
  4.2 Empirical Results ........................................................................................................... 34
    4.2.1 Changes in External Accounting Framework ......................................................... 34
    4.2.2 Asset & Liability Management ............................................................................. 36
    4.2.3 Asset Allocation ...................................................................................................... 37
    4.2.4 Credit Risk ............................................................................................................. 38
    4.2.5 Conclusion ............................................................................................................. 39

5. Analysis ............................................................................................................................. 41
  5.1 Changes in External Accounting Framework ............................................................... 41
  5.2 Asset & Liability Management .................................................................................... 42
  5.3 Asset Allocation ........................................................................................................... 43
  5.4 Credit Risk .................................................................................................................... 44

6. Conclusions ....................................................................................................................... 45
  6.1 Theoretical Contribution .............................................................................................. 45
  6.2 Practical Contribution ................................................................................................... 46
  6.3 Study Limitations ......................................................................................................... 46
  6.4 Suggestions for further research ................................................................................ 47

7. Reference Table ................................................................................................................ 48

8. Appendix 1 ....................................................................................................................... 63

List of Figures

Figure 1: Model explaining impact of external accounting framework ................................. 33
Figure 2: Respondent list ................................................................................................... 34
1 Introduction

1.1 Background

Economic globalization has created the demand for common international accounting principles, standards and practices. International accounting encompasses “multinational enterprises, global movements to shape the direction of accounting, and comparative accounting requirements and practices” (Prather-Kinsey & Rueschhoff, 2004).

International organizations, both public and private, endeavour to establish norms, standards, and requirements for international financial accounting. These international organizations include the International Accounting Standards Board and the Financial Accounting Standards Board, whom develop and encourage implementation of financial standards, principles and best practices (Preston, 1996).

The efforts of globalization and global markets cause international accounting standards to be fundamental and beneficial for many countries. The harmonization of accounting frameworks, reporting practices and principles grants a common field of economic competition for all nations. This new international accounting framework will be developed to appreciate variances in the following accounting values: professionalism, statutory control, uniformity, flexibility, optimism and transparency (Marrero & Brinker, 2007).

The International Accounting Standards Board uses a framework that defines terms used in financial accounting statements worldwide for the assessment of financial positions. The International Accounting Standards Board interprets the terms of assets and liabilities in the following ways:

- Assets refer to resources controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity.
- Liabilities refer to present obligations of the entity arising from past events, the settlement of which is expected to result in an outflow from the entity of resources embodying economic benefit.
This framework underpins the development of new standards or the evaluation of existing standards of accounting (Potter, 2005), constructing a foundation that facilitates the true and fair concept of financial reporting as well as producing consistencies in its primary elements. With a framework agreed upon, the international accounting organizations can set about building rules of accounting founded on a cohesive set of basic principles.

The main focus of many institutions with assets to invest is to fund liabilities, as is the case with insurance companies, pension funds, etc. Therefore, asset/liability management (ALM) should be the investment priority and the foundation for choosing the core portfolio. Insurance companies may be the birthplace of ALM and undoubtedly have been the model of ALM framework, recognizable by the heavy regulations imposed on them. IAIS Standard No. 13 (International Association of Insurance Supervisors, 2006) defines asset/liability management as the practice of managing a business so that decisions and actions taken with respect to assets and liabilities are coordinated. Therein is the framework of proper ALM: it should be a harmonized accounting model based on increasing the funded ratio (assets/liabilities). It must ensure not to have any other objective or interference, such as generic market ratios, peer group comparisons, or inflation. Therefore, ALM can be defined as the accounting framework that interrupts interest rate risk management.

1.2 Problem discussion
An accounting framework defines the essence of financial accounting and reporting, its objective, as well as its constraints. Today FASB's contribution as well as its continuity are due to the nature of the accounting framework and its utility (Miller, 1998). The main reasons for developing an accounting framework are that it provides fundamental principles which enhance the setting of standards for accounting (Mosso, 1998). Although constraints such as its generalizations and deficiency in distinct positions are amid the downsides, the benefits of the accounting framework and its improvement to accounting practice including the establishment of standards increasing consistency as well as comparability. Generally accepted conditions and principles guiding financial reporting, counterbalance any limitations and drawbacks. Continued development and enhancement of the framework is therefore recommended (Potter, 2005).
“FASB and IASB have undertaken the largest revamp of financial statements ever conducted in a single step”, stated (Lamoreaux, 2010, p 1). Advantages of adopting such changes under IFRS include improved quality, transparency and comparability of financial reporting that further lower the preparation costs of financial statements and aid in making more efficient investment decisions (Choi & Meek, 2005; Jermakowicz & Gornick – Tomaszewski, 2006; Wong, 2004). The acceleration in change to find a common international external reporting framework for considerably more global companies, but also due to pressure to find common ground with new jurisdictions adopting the standards (Jermakowicz & Gornick – Tomaszewski, 2006; Hellmann, Perera & Patel, 2010). Ngeno focused on determining whether the evolution of conceptual frameworks of accounting can lead to higher reliability of accounting numbers. Her paper also studies the limitations as well as benefits of an accounting framework which emphasises the value relevance of financial statement information and indicated that the implementation of an accounting framework commonly reinforces accounting quality.

Reliability is a qualitative characteristic deemed to include comparability and prudence which refers to the inclusion of a degree of caution to the judgments undertaken while preparing unbiased financial statements (Mosso 1998, Sterling, 1982). Reliance is a qualitative characteristic, nevertheless, remains despite attempts to reduce potential loopholes with new standards as well as renewed awareness. It is quite demanding to find common ground on such a problem area as obtaining measurement criteria for the various elements (Miller, 1998). Furthermore Christie, Brozovsky and Hicks (2010, p 43) argued that accountants need to “see the details before they will use a new set of accounting standards”. Iatridis (2010) analysed whether the IFRS adoption lead to higher quality of accounting numbers. His paper considered the value relevance of IFRS-based financial statement information and indicated that the implementation of IFRSs generally bolsters accounting quality.

Managing a company’s balance sheet is core for insurance companies, for non-financial institutions balance sheet manage has historically been perceived as exclusively an accounting issue, however this is changing (Bodnar, Hayt and Marston, 1998). For insurance companies, nonetheless, the balance sheet reflects risks of the environment from the asset side and business risks from the liability side. Coordinating such risks is the goal of asset and liability management. Historically ALM dates back to Markowitz in the 1950’s (Markowitz,
1952, 1991) for asset allocation, more recently this has been extended to include liabilities (Sharpe and Tint, 1990). According to Meer and Smink (1993) both practitioners in the insurance industry as well as theoreticians have shown renewed interest in Asset - Liability Management (ALM), most of the attention resulting from the tempestuous interest rate climate. Danielsson et al (2011) stated that the financial framework has a significant impact on today’s global economy. Therefore ratios and liabilities on a balance sheet are the eye-catching characteristics of financial institutions such as insurance companies. Such kinds of characteristics determine that their balance sheet should be different from industrial enterprises in terms of the different risks implied in the balance sheets. Zenios & Ziemba (2006) described how financial institutions pay a significant amount of attention to the asset and liability management as this generates profits by simultaneously managing both. On the asset side, ALM focuses on asset allocation, whereas on the liability side it focuses on market liquidity risk and credit risk. Based on the above ALM becomes the fundamental element of managing financial institutions daily operations. Yan (2013) determined in her research of asset liability management and the economic cycle how financial institutions make decisions throughout economic cycles. The results observed changes of system given the time horizon.

Financial institutions such as insurance companies may be the birthplace of ALM and certainly have been the model of ALM practice, thanks to the heavy regulations imposed on them. IAIS Standard No. 13 (International Association of Insurance Supervisors, 2006) defines asset/liability management as the practice of managing a business so that decisions and/ or actions taken with respect to assets and liabilities are coordinated. Nguyen and Molinari (2011) analysed to which extent the accounting model for insurance liabilities in the exposure draft is qualified to generate useful information to users of financial statements. Furthermore, they give recommendations about which fields need further adjustments in order to comply with decision usefulness as the overriding principle.

Credit risk has been broadly researched within the context of defaultable bonds (Black and Scholes, 1973, Merton, 1973, 1974, Black and Cox, 1976); however the applications to insurance companies are hardly addressed. A study undertaken by Fitch Ratings (Piozot et al., 2011) regarding Solvency II, examines the implications of this regulatory regime in respect of insurers’ asset allocation and thereafter the attractiveness of different asset classes.
Nonetheless one major finding is that insurers shall likely increase their investments in higher-rated corporate and government bonds. Additionally within the working paper of Gatzert & Martin (2012), they reviewed the credit risk models available to insurers’ risk management. Furthermore they mentioned that many insurance companies hold capital investments in government and corporate bonds which are generally exposed to credit risk, thereby requiring a stronger need for adequate credit risk models for insurers. Thus, reporting provides the necessary information for regulators and shareholders regarding the sustainability of the insurance company asset and liabilities.

1.3 Purpose

The purpose of this investigation is to contribute to the understanding of how changes in the external accounting framework impacts an insurance company’s asset and liability management focusing on the asset side and credit risks.

1.4 Limitation

Within the framework only disclosures obligatory under Solvency II and economic valuation were taken into consideration within Swiss Re. A delineation of management control processes has been made with a focus on controls.
2 Methodology

2.1 Methodological basis
As I have chosen to research a complex area regarding changes in external reporting framework within the context of a new type of change in companies, the arguments Jacobsen (2002) describe for methodological tools to analyse reality become applicable, namely either perceived as an objective interpretation or a human construction. Furthermore Alvesson & Deetz (2000) expand the method into rational terms including design, control, procedure, validity and reliability. This forms the keystones for the researchers work with empirical data. “Case studies offer the possibility of understanding the nature of accounting in practice; both in terms of the techniques, procedures, systems etc.” (Scapens, 1990, p 264). Therefore, by using the case study approach it supported several areas of interest and allowed me to explore deeper into one area rather than comparing different areas to each other.

2.1.1 Research Strategies
Saunders et al. (2007) explain that when evaluating research strategies it is not the design attached to a particular strategy that matters, but whether it is appropriate for any particular research. Although research methods including surveys give a one-dimensional perspective of accounting practice, case studies allow for more extensive fieldwork (Scapens, 1990). The research design of my case study was multidimensional meaning that the primary case example is the use of external accounting framework changes impacting asset and liability management within an insurance company, data collection is also focused on one case company. Hence my extensive fieldwork is focused on both the changes posed by external accounting framework change and the context posed by the case insurance company related to asset and liability management.

2.1.2 Exploratory studies
Exploratory studies are also fruitful as a precursor for areas where theory is not well developed (Scapens, 1990). The theoretical background for my study lies in management accounting framework research, as a robust theoretical basis for the changes in the framework impacting asset and liability management and research of such changes have not yet advanced. Sandhursen (2000) explains that exploratory research by stating that the research results in a range of causes and alternative options for a solution of a specific problem.
Additionally, exploratory research is defined as evolving those models for the basis of further study. This is quite a relevant perspective for rationalizing the use of an exploratory context of my case study. Furthermore to develop an implementation accounting framework for further discussion based on the correlations recognized in interviews with the case company and personnel, impacts the accounting framework extracted from interviews in order to find the most consistent responses as a basis for further research.

It is generally accepted that within accounting research which encompasses my study, neoclassical economic theory is used to explain quantitative and qualitative studies where actions are concluded within the context of competitive markets. Generally, positive accounting theories are concerned with the explanation and prediction of events and they do not explain or account for processes as such (Scapens, 1990). Based on this limitation, they are not considered potential theoretical discussions for the research papers including this study.

2.1.3 Qualitative research

Biggam (2008) describes qualitative research as being used in research situations where opportunities for quality feedback exist which was the case for this study due to the fact that I had access to various types of accountants and mathematicians located across multiple countries within Europe whom all worked for the company I chose to analyse. Quality responses were vital to the collection of data as understanding the issues in depth permitted an opportunity for the interviewees involved in data collection to voice their point of view outside of a strictly structured context. Cohen, Manion & Morrison (2000, p 182), “In a study the researcher typically observes the characteristics of an individual unit – a child, a class, a school or a community. The purpose of such observation is to probe deeply and to analyse intensely the multifarious phenomena that constitute the life cycle of the unit”. This interprets the aim of my study into building the accounting framework regarding asset and liability management as well as the variables that impact same. The implementation framework required extensive research of the case company, after which the analysis is validated via expert opinions.

The goal of an insurance company is to maximise profits and ALM is a tool used to achieve this goal. Therefore I proposed a model which can be later seen in the theory section in order
to simulate the asset liability management throughout a cycle – thereby supporting my level of theoretical understanding in order to achieve my purpose when interviewing my respondents. I considered the change in external accounting framework as the instigator of change. Consequently, the asset liability management within an insurance company became the decision-making process. Thereafter I constructed a cycle situation through simulating key characters of the cycle. In this way the cycle becomes the environment of this ALM decision model. The key characters of the cycle included asset allocation (occurring when the decision is made) and thereafter impacting credit risk (associated costs/ liabilities).

2.2 Scientific approach
When I considered research philosophies generally a methodological approach impacts every study and is defined as “an approach for creating knowledge; based on a set of ultimate presumptions, using methods within a field of activity or a subject area”. (Arnbor and Bjerke, 1997, p 454). Ibid (1997) classified three methodological approaches for undertaking business research that I could potentially use; namely the analytical approach, the systems approach, and/or the actors approach (Ibid, 1997, p 49). After much analysis, it arose that all three categories correlated to six main groups of paradigms mentioned by ibid (1997, p 25) as well as differing from each other from the perspective of their view of objectivity/subjectivity, of reality, dependency/independency of the created knowledge, and the search for explanations/understanding. Such relations are explained in the Figure below.

My study's purpose interpreted the most suitable of the above approaches to use – the actor’s approach, which allowed me to contribute of how changes in the external accounting framework impacts an insurance company’s asset and liability management.
2.2.1 Actor’s Approach

My study is created within an insurance business to ensure the realities studied are socially constructed and therefore deeming the actor’s approach relevant to use. Whilst my study is based in theory, it must be noted that “accounting always responds and changes to the environment in which it functions” (Chow, Chau, & Gray, 1995; Zeff, 2007). To ensure I had a standardized approach in gathering relevant information; I analysed existing literature in order to create a theoretical framework as well as contextual variables. Thereafter external reporting framework changes are specified as well as an analysis of such a change in the pipeline for asset and liability management within an insurance company, thus allowing me to establish the case example.

The actor’s approach defines the world as subjective; consequently, one becomes a social actor and should thus be studied in this form which was essential to me in implementing the approach (Arbnor & Bjerke, 1994, p 191-192). This premise accentuated for me the importance of understanding and explaining relations between parts, and between parts and the whole. Nevertheless, I found it extremely important to increase the distance from the actors and get a broader perspective on what is studied as prescribed by ibid. Business is an example of a field which is composed of people being influenced and influencing explains ibid. Social reality depends on human beings perception writes ibid stating that it is not a single true solution to a problem within the actors approach, however its needed understand from the reality that I as the researcher was in. Truth is relative, meaning it can change over time and space describing ibid. Within my study, this means that perceiving the truth is not always the only truth however it may benefit my understanding of changes in the external accounting framework impacting asset and liability management of my case company.

It became apparent that the actors Approach is quite useful for social research due to society itself being composed of human activities; however it also has incompatibilities in application to my study. If perception is taken as reality in the actor’s approach and applied within my study, it is necessary to find that the outcome of my study is useless for my purpose since one’s perception of reality is dependent on other subjective concepts which can be various compared with mine.

Knowledge within the actors approach is generated beneath social constructions as well as logical argumentation relations (epistemology equating to dialogue). In order that I create the
perception of reality, it required permanent communication with not only the company which was involved in external reporting changes to asset and liability management but also other actors involved such as IASB, analysts, stakeholders etc., which was impossible not only due to limited resources but its essential ridicule (otherwise my study will become a permanent project). Nonetheless, elements within the scientific ideas in the actor’s approach can be reasonable for my study, for example the reality creation process itself can be an impulse of the knowledge promotion which to some extent can remedy the weakness in adopting other approaches.

2.3 Qualitative approach
The purpose of this study is to illustrate the changes in external accounting framework and its impact to asset and liability management meaning that a qualitative approach was used to achieve this. The qualitative approach described by Bryman and Bell (2005, p 405, 493) is that the researcher such as myself can use ethnographic methods involving ways to collect data that enable the researcher to examine himself, respondents as well as external factors and situations that are not homogenous. Bryman (2002, p 250) also explains that a qualitative approach would understand the reality that is created by the individuals. This approach was suitable as it enabled a subjective description of an individual’s understanding of how they perceive changes in external accounting framework implementation on asset and liability management. Wenneberg (2001, p 51) describes that it is important to strive for a data collection method that ensures the context of behaviours and decisions taken. The result is denoted in the conclusion later.

2.4 Primary data
The main empirical source for my primary data was through Swiss Re Group who has experience in external accounting framework changes within asset and liability management. My study was able to use a theoretical framework as well as empirical study to analyse disparities along with similarities. To gain knowledge my study undertook interviews. These interviews were a fundamental source in obtaining the subjective data required to accomplish the purpose of my study regarding the changes of external accounting framework impacting asset and liability management of insurance companies. Consequently this allowed my study to combine both primary data as well as previous research for my readers.
2.5 Literature Collection

As mentioned above I reviewed theoretical framework encompassing changes in external accounting framework of asset and liability management to ensure the purpose of my study could be achieved. It was vital for me to ensure a deep literature collection was obtained in order to undertake a comparison and thus understand the disparities along with similarities among theories and my study’s empirical study. My initial study was to create a theoretical framework which laid the foundation for my understanding of the purpose. From this perspective an interview model was created, allowing for my knowledge to be used in the field, and thereafter creating relevant questions as part of my interview guide. This literature collection ensures my approach to develop a theoretical framework was structured and thereafter in the subchapters portraying how the theory of my collection has been built via text books as well as scientific articles. Bryman (2002, p 456) explains the usefulness of uncovering literature in the subject area to understand what has already been researched, which models, contradictions and answered questions that already exists. Seuring and Gold (2012, p 545) defines the influence of a literature review in an early phase when the researcher can more easily question and that literature is an important part throughout the research process to arrive at a decision. My study has used both text books and scientific articles as my primary literature sources. Bryman (2002, p 456) explains that a good approach is to examine an existing source's bibliography to find additional reliable sources. Google searches undertaken were also used as a source to collecting information for my purpose.

2.5.1 Text Books

Text books provided me with a basic understanding of changes within external accounting framework of asset and liability management within an insurance company specifically Swiss Re regarding descriptions and definitions. This foundation allows for my readers to comprehend and discern the contribution of my study. Using key words and phrases to search for literature is a recommended technique for researchers to undertake as per Seuring and Gold (2012, p 551) and which I used accordingly.
2.5.2 Scientific articles

In order that I gained a deeper knowledge for my study, scientific articles were used to research from various perspectives. Additionally these articles were needed to acquire the necessary knowledge I used to enhance my understanding of changes to external accounting framework regarding asset and liability management of the insurance company Swiss Re. Such scientific articles I sourced via databases including the University of Gävle which primarily used Emerald, SAGE, Jstore and ScienceDirect. Keywords I used included changes in external accounting framework, asset and liability management, insurance companies. I have also used bibliographies as a source for my study.

2.6 Source Criticism

Common limitations regarding my case study research has been identified by various researchers. Such limitations include but are not limited to, a potential lack of systematic reporting of all evidence, the collection and generalization of evidence. Which challenges drawing boundaries regarding the subject matter of the study, researcher bias including ethics of the researcher’s relationship with his/her subjects (Scapens, 1990).

By ensuring the same structure of all interviews this allowed for a systematic collection and reporting of evidence. Transcribing and analysis of these interviews is aided by my use of recording equipment. Furthermore direct quotes I obtained only after systematically writing of my interviews into text format. Where a recording device was unavailable, as was the case with some of my interviews (due to geographical location), detailed documentation of my interview was created. Allowing for direct quotes if reliably written down notes and thereafter agreed upon by my interviewee.

Creating boundaries around my subject matter became a research design and scope undertaking. This was a significant area of consideration for my study when questioning participants about pre-published data standard changes as well as asking how they think it will be or should be implemented. Where possible I addressed limitations and tried to mitigate using standard change as an example of the type of significant developments that are expected to be common practice in future years.
Gummesson (2003) implies that all research is interpretive, from the very beginning until the very end. The impact is then to study context more effectively, to interpret “context” in the context of the focal business or respondent. Therefore there is no possibility of an objective study, this I abated by feedback of the interpretation to the interviewee during the course of the interview thus validating their sayings. Additionally analysis which I created from written text of interviews and all affirmations I followed up by quoting the interviewees from the supporting documentation of our interview.

Limitations of my interviews as a data collection methodology may include potential bias from poor questions, response bias perhaps include incomplete recollection and reflexivity. Gummesson (2003) describes that all research is interpretive, and that all layers of the research ‘edifice’ – candidly put, ‘the systematic and objective pursuit of truth is a myth’ (Gummesson 2003, p. 487). Mitigation of reflexivity I’ve tried to ensure via neutral standing of myself as the interviewer in presenting the questions or allowing the participant to “think for themselves” and not hint regarding right or wrong answers. Changes to external reporting framework of asset and liability management does not entail sensitive data relating to the positions of my participants. All questions were structured ahead and I conducted a semi structured format; thereby mitigating the effects of poor questions. Fragmented recollection I mitigated via proper interview documentation and response bias addressed via a consideration for the general background and positions/roles within Swiss Re of my participants before analysis and grouping.

2.7 Data Collection
The next step was to undertake my empirical data collection which had a basis in literature collection and therefore questions were inspired when my study interview guide was created. These facets as well as the selection and documentation shall be explained within this section as well as how my study’s empirical application was made. This subsection begins with a review about why interviews were selected as a form of data collection as well as the additional material within the interviews being used in my study. Thereafter are my presented choices made via the data collection. Of the six sources of data identified by Yin (1994), interviews were used as a source for my study. This option gave my study the best opportunity to achieve my purpose via data collection and I reviewed continuously to ensure the correct approach was chosen.
My study is created upon an interpretive as well as qualitative approach where interviews were my best option. Positive aspects of interviews as a source of data I identified by Tellis (1997) which include enabling targeted and focused collection of evidence as well as an insightful look into my purpose at hand. Semi-structured interviews are the most used approach of gathering qualitative data in economic research disciplines (Koskinen, Alasuutari, Peltonen, 2005) and this interview method can also be found within my study. My approach encompasses a research template being prepared beforehand by myself as the researcher around a few themes and thereafter communicated to my interviewees/participants. It was critical that my order of the key phrases is not mandatory, and thus allowed for each of my interview sessions to arise from free discussion on topics related to my key phrases leading to increased topics being discussed. The purpose of my template was to ensure that all my questions were raised, and the responsibility of myself as the researcher lay in directing the conversation to focus on the purpose (Koskinen et al., 2005). In my study, focusing on the conversation was especially important with the external reporting experts who all possessed vast amounts of knowledge on my key phrases presented and consequently had many ideas. All interviews were transcribed to facilitate reliability of my study, although the formal application of case study methodology was also a reliability-ensuring trait of my research.

Within my study, it was possible to use multiple sources of information, which also increased the credibility and thus the quality of my collected material explains Yin (2007, p 125), thereby known as triangulation. Within my interviews, people interviewed refer to other sources of information explains Yin (2007, p 117). Such additional sources of information I could therefore also use such as to demonstrate the respondent’s expertise in the field. Secondary sources I considered within the empirical study when the opportunity arose, thereafter the above underlined that it is essential to obtain confirmation of my responses. Additionally this provided a greater understanding of my investigated data when my material could be examined even after my interviews had taken place.

2.7.1 Selection
The company I choose because they were widely known within the insurance industry for integrating external reporting changes on a quite regular basis. Yin (2007, p 104) explains
that ensuring the company chosen is fit for purpose of my study is vital to ensure before data collection begins. Upon, undertaking my study it was vital that the company was fit for purpose and the criteria I used for choosing the company is that they are publicly working on changes to their external reporting framework which is impacting their asset and liability management.

Bryman and Bell (2005, p 377) indicated that the sample selection of respondents with the company to be interviewed must have been undertaken where the company selected persons to be interviewed. Ensuring my study’s purpose is achieved, which is the role of management pertaining to the human aspects of the external reporting framework changes required my participants to be internally involved with the process and thus the company nominated candidates. My communication with the company when the sample was created of respondents was interactive. If this approach was not taken than an inevitable risk of having participants without sufficient knowledge regarding my purpose of my study would be selected, which in turn would have jeopardized the reliability of my study creating inaccurate results.

2.7.2 Interviews

Interviews were used as a data collection method for my study. Interviews are a quite common method of gathering information, where questions are formulated to answer the purpose of the study as described by Yin (2007, p 116-117). “If accounting researchers want to exploit the full potential of a study methods to understand accounting, they must be prepared to study accounting practices at various levels within the organisation […] studies should explore the day-to-day accounting practices of real people in the context in which they work.” (Scapens, 1990, p 278). Based on the perspective by Scapens, my company interviewees were chosen on several different company levels and from various functions to ensure a holistic view into the company.

Nevertheless, it was critical for me to be aware and skeptical about the data I collected, as there may have been information that was difficult to explain or simply forgotten by the respondents during my interviews. Perhaps they could have influenced each other's responses, which may be detected by the same expression among several respondents explains Yin (2007, p 118-119). Additional aspects I considered in the interview process is
that myself as the researcher may have preconceptions about the subject and thus not getting
to control the interviews, as described by Gillham (2008, p 104). Asking relevant questions in
a case study where useful information arrives explains Yin (2007, p 82-84). Listening to what
the respondents within the company mentions and not to miss important explanations or
observe what they expressed through body language had significance for subjective
interpretation. Essentially respondents were controlling the interviews however this was
limited in part to my interview guide produced. Lastly, respondents would verify my
transcriptions they took part of, in order to verify that they have been recounted in an
accurate manner. My approach is illustrated by Gillham (2008, p 34) mentioning that a
subsequent verification of the respondents is necessary to obtain dependable results that are
consistent with what has been mentioned.

2.7.3 Interview Questions
From the perspective of my theoretical framework, a deep understanding of my study
emerged which in turn has resulted in sufficient knowledge to create questions to guide my
interview. It was critical that I had such a deep understanding of matters which would be
considered relevant, and thus where my basic structure of my questions had been derived
from, for the study’s purpose. Yin (2007, p 117) describes that it is important to ask questions
of "how" to obtain information from respondents. My study’s purpose is to gain an
understanding of the changes in external accounting framework in the field of asset and
liability management and to get answers to this, it is vital that I asked respondents about
issues they foresee as well as allowing them the opportunity to describe how they see the
external reporting framework after changes implemented by the accounting bodies impact
asset and liability management. Ensuring my questions were open avoided yes and no
answers, which also resulted in my participants describing their responses from experience.
Securing that my respondents understood my questions correctly and answered them
according to my purpose which is also described as important by Yin (2007, p 85).
Additionally, he explains that questions may be compiled in an interview guide allowing for
questions to be included under various predetermined themes/key phrases. Gillham (2008, p
110) mentions that each case has some key words which may function as a consequential
issues. Bryman and Bell (2005, p 369) further describe the importance of ensuring issues
should not be a leader. Similarly as explained above, my interview guide for my study was
designed in a format of developed key phrases with relevant questions and key points of each topic. My interview guide is within in Annex 1 for the interested reader.

To ensure my respondents agreed to my purpose, key words in my interview guide were created to use as follow-up to my questions. Bryman and Bell (2005, p 369) describe that general issues are important to consider when respondents' descriptions are put into context. Within my study some respondents are anonymous and where agreed upon, respondents are named in my study, thereby reducing the need for general questions. However, in the interest in understanding the respondents' position and their role within the company to facilitate reliability of my study, these are detailed in Annex 2. Lastly, to discuss the disadvantages of interviews described by Yin (2007, p 112) where there is a risk that the interview questions are not well prepared. The outcome could potentially mean that responses of the participants will be poor and reliability of my study will obviously be reduced. To ensure my questions were formulated for my interviews in a competent manner, a test of my questions was undertaken with an outside person to gain feedback on how my key phrases were experienced. The conclusion was that there was potential for an open discussion driven by the way my questions were phrased and thereafter asked.

2.7.4 Interview Documentation
In order to create a credible and complete material process after each interview is executed as required per Yin (2007, p 119-120) my interviews were recorded where possible and then transcribed. An advantage of recording is that I may both discern what is said and how it is said, since this may be important for my analysis explains Bryman and Bell (2005, p 374). For recording to be possible, it was vital that my participants agree to be recorded explains Yin (2007, p 120). Some of my participants gave permission to be recorded during my interviews, which meant that my empirical material has a higher reliability. Recording provided that my participants were observed more accurately in my descriptions regarding their experiences. This also allowed me to verify important terms and key phrases to ensure inclusion in my study. Thereafter my recordings became my interpretations of that described by my respondents, more reliable, leading to a material for my study, which was more reliable as a whole. Where interviews were not recorded, a risk arose that my notes may have missed on important matter explains Bryman and Bell (2005, p 370). Consequently, this may cause important topics described by my respondents to be excluded from my study, which
meant that my study could have missed important factors.

Gillham (2008, p 167-168) illustrates that transcription is time consuming where everything that respondents say should be documented and interpreted which is made easier if done shortly after the interview has been undertaken. By using transcripts within my study ensures that accurate descriptions and interpretations were made of all my participants’ feedback. My study's transcriptions were performed after each interview which allowed me the opportunity to not risk forgetting important aspects. To validate who said what every written record began with the date and location of my respondent. Each transcription having the same structure by Gillham (2008, p 168, 170); is a good and clear way to transcribe. Transcriptions in my study were undertaken in the assumption that they will take additional time to ensure that all my participants said and what had been noted and will be represented accurately. Based on the above rational and according to Bryman (2002, p 343-344), transcriptions in my study have the following guidelines:

- To literally write each word of the respondents and also the questions that were posed
- Comment on unusual body language or tone levels on a consistent basis
- Notes on respondents taking unusually long pauses

Such notes and guidelines contributed to my analysis of my empirical collection becoming more comprehensive and represented my respondents in a more equitable manner.
3 Theoretical Framework

3.1 Choice of theory

Baum (1996) defined Asset Liability Management as the practice of managing an insurance company to ensure that decisions and actions taken regarding assets and liabilities are coordinated in order to ensure effective utilization of the company’s resources. In this context, it is necessary to assess developments within the external accounting framework specifically related to assets and liabilities.

3.2 Changes in External Accounting Framework

Myers & Read (2001), cited that legislation ensures all insurance companies maintain a certain level of surplus to cover risk, which ensures insurance companies, shall be able to fulfil their obligations towards their clients for all outstanding policies/claims. Furthermore, Myers & Read (2001) indicated that such surplus requirements can be costly due to some tax systems subjecting investment income to double taxation at the corporate level and thereafter when it is realised on shareholder level. Therefore insurance companies try to minimize their surplus amounts. Regrettably, only a minor amount of studies target the insurance industry (Cummins & Venard, 2008; Fields, Gupta & Prakash, 2012; Pasiouras & Gaganis, 2013), and all have discussed that the quality of the environment undertakes an essential role in impacting an insurers profitability as well as risk-taking. According to Pasiouras and Gaganis (2013) supervisory influence and regulations have a significant impact on an insurance firm’s assessment and management of exposed risk, and the protection of their policyholders’ interests. Whereas previous studies have indicated that government regulations and political stability had positive effects on financial market performance (Alesina, Ozler, Roubini, & Swagel, 1996).

Horcher (2005) defined risk and exposure as being closely linked and often used interchangeably describing risk as the probability of loss, whereas exposure is defined as the possibility of loss. In order to prevent losses occurring from risks, various forms of risk management has been implemented. Thereby protecting consumers against the risk of insolvent insurance companies – the European Commission ensures risk management is regulated by Solvency II Directive. Whilst earlier studies mentioned that the quality of the legal and regulatory environment has an impact on the insurance market, Klein and Wang
Further discussed how governmental regulations impacted how insurers are compelled to consider obtaining “accounting credit” for risk transfer arrangements. Fields et al. (2012) found that stable operating environments result in less risk-taking for insurance companies.

Solvency requirements were first created within the EU in 1970’s, thereafter the Solvency I project came into effect, however the Solvency I regulation did not differ from the earlier regulations as it predominantly focused on the solvency margin. McNeil and Wendin (2007) mentioned the downside of this was the fact it mainly focused on volume based and not explicitly risk based. In order to change such regulations the Solvency II project was established and comes into effect in 1st January 2016. This shall replace multiple insurance directives currently in place and aims to enhance consumer protection, modernise supervision, a deepening of EU market integration as well as increasing international competitiveness of EU insurers. Solvency II does not just encompass capital requirements, it also incorporates risk management. All these various aspects are covered within 3 difference pillars;

i) Capital Requirements,

ii) Governance & Supervision

iii) Enhanced Reporting and Disclosure.

Freeman (1984, p 25) determined that an organization’s stakeholders include “groups that affect or are affected by the accomplishments of the organization’s purpose”. Internal and external stakeholders regularly review financial statements as a way of decision making (Scott, 2009). Within the insurance industry, financial misstatements as well as other accounting errors increase the risk and cost of regulatory surveillance. Accordingly, board-level financial expertise is critically important in securing performance targets in complex business sector such as the insurance industry Agrawal and Chadha (2005), Armstrong, Guay and Weber (2010) and Kim, Maudlin and Patro (2014). Malafronte, Poizio and Starita (2015) mention that disclosing financial and risk information by insurance companies tends to be favoured investment analysts and regulators.
There are multiple significant factors working to advance insurers to move from their past and present practices of ALM based on cash flow, earnings and yield spreads to an era of economic value methodology. Babbel (2001) has summarised these factors as the following:

- An insurance company’s financial goal is to create value for its shareholder
- Multiple professional and regulatory bodies such as the Financial Accounting Standards Board, the International Accounting Standards, the Securities and Exchange Commission, the American Academy of Actuaries, and the National Association of Insurance Commissioners have recommended the use of market value or fair value in ALM
- Consolidation within the insurance industry, which resulted from mergers and acquisition activities due to the failure of many insurers. Insurers whom have emerged as winners were more effectively capitalized and better prepared to launch and implement advanced ALM tools.
- Intense competition within insurance and non-insurance markets has narrowed down the profit margins for many insurance products thereby as spreads shrink insurers require more advanced techniques to measure value.

Multiple researchers have historically used mean-variance criterion to investigate ALM problem. Sharpe and Tint (1990) studied liabilities in pension fund asset allocation strategies, where as in recent years, scholars have adopted a dynamic mean-variance model to studying ALM. Many studies considered risky asset and liability as geometric motion under continuous-time setting; such as, Chiu and Li (2006), Xie (2009), Yi, Li & Li (2008) and Yao, Lai, & Li (2013).

It is widely accepted within the insurance industry that performance assessment shall be faster with an approach focusing on value. As this creates an incentive for insurers to know the economic value of their liabilities in order to correctly price them - thus a standardized valuation model is required. Babbel and Merrill (1998, 1999) determined that a standardized valuation model is one that consistently and accurately considers key risk factors of all major asset categories including both sides of the economic balance sheet. Recently models have included market liquidity risk which as Babbel (2001) anticipated regulators require insurers to focus on value by providing valuation model assumptions. Markowitz (1952) mean variance (MV) portfolio selection is one of the building blocks of modern portfolio theory and is extremely useful in ALM. This MV concept was applied by Chiu and Li (2006) to
manage the surplus level of a company’s continuous-time economy and was based upon the
techniques developed by Li and Ng (2000), and Zhou and Li (2000). There are numerous
lines of research regarding MV within ALM, including the numerical methods for solutions
under different market constraints (Wang and Forsyth, 2011). To name a few:

- The insurer’s problem with co-integrated assets and insurance liabilities (Chiu and
  Wong, 2012).
- The case of endogenous liabilities (Yao et al., 2013).
- The management of co-integrated assets and a diffusion liability (Chiu and Wong,
  2013a).

3.3 Asset Liability Management

Asset Liability Management is a vital function to insurance companies in the present
environment due to volatile global market, proliferation of new financial products and
changing environment of regulatory system (Koch and MacDonald, 2009). It can be
described as a dynamic and comprehensive framework which helps insurance institutions to
measure, monitor and manage the market risk (Consiglio, Cocco and Zenios, 2008). Further
discussions on ALM can be found within Gerber and Shiu (2004), Decamps et al. (2006) and
Consiglio et al. (2008), however many of these authors target the optimisation of dividend
pay-out and ruin problems of ALM. Nonetheless in more recent years many scholars have
utilized the dynamic mean variance model to study the ALM issues, to my knowledge
Leippold, Trojani and Vanini (2004) was the first to consider the multi-period mean variance
ALM problem. Thereafter Yi et al. (2008) and Chen and Yang (2011) extended the work of
Leippold et al. (2004) to include cases with uncertain exit time. From this continuous-time
perspective, Chiu and Li (2006) and Xie, Li and Wang (2008) investigated the ALM problem
encompassing uncontrollable liability. Based on such author’s investigations, ALM, liability
management and asset management share the same practical significance.

Kosmidou and Zopounidis (2004) stated that the ALM process may have various
responsibilities in order to manage risks such as market liquidity risk management, market
risk management, trading risk management, funding and capital planning, profit planning and
growth projection. Historically, asset liability management has focused principally on risks
associated with changes in interest rates; however in recent times, credit management
recognises a much broader range of risks including market liquidity risk and credit risk etc. Classical papers of: Samuelson, 1969; Merton, 1969; or, perhaps recently, Kim and Omberg, 1996; Wachter, 2002 offer analytical solutions in order to optimise strategies of ALM. However it is mainly numerical methods which are used in practice, some circumstances allow for successful implementation of these methods such as Gondzio and Kouwenberg, 2001; Consigli and Dempster, 1998; Consiglio et al., 2008; Escudero et al., 2009.

ALM can be inherently a multi-period challenge, and thus the number of scenarios needed to represent reality increases exponentially, especially with the number of time periods needed to consider. Multiple studies suggest scenario-based approaches for ALM in order to optimize the problem and ensure it can become manageable in practice (Bogentoft, Romeijn and Uryasev, 2001).

3.4 Asset Allocation
Markowitz (1952) described “Portfolio Selection” which recommended that an investor should consider the impact of a risky security not only relating to the portfolios expected return, but also its variability of return. Markowitz mentioned that a primary function of portfolio management was to identify an asset allocation strategy providing the highest expected (mean) return given a level of risk which is acceptable to the investor. Many insurance companies today invest their capital (including Swiss Re) either in fixed interest assets i.e. bonds, or in a variable return asset i.e. a stock or a basket of stocks. The future evolution of the capital market can be identified under the probability measure which is used for risk analyses (Goecke, 2003, and Kling, Richter, and Russ, 2007), or under the risk neutral measure, which is used for a fair valuation of installed options or fair contract designs (Bacinello, 2001, Grosen and Jorgensen, 2000, 2002 and Miltersen and Persson, 2003) and required for Solvency II purposes.

On the other hand, the strategy providing the lowest level of risks (variance) for a specified level of expected return, Markowitz introduced the theory of efficient frontier representing the set of optimal combinations of risky assets for each level of risk. Without borrowing and rational, risk-adverse investors shall select a strategy that is on the efficient frontier. Within the above model Markowitz describes the optimal portfolio, given the conditions of riskless lending and borrowing rates, decision makers working with the same set of inputs shall prefer
a single portfolio of risky assets. Markowitz criterion has been popular with insurance companies (including Swiss Re) and in financial economics since being awarded the Nobel Prize. Important enhancements to Markowitz’s criterion have been undertaken to include:

- Solutions in a multi-period setting (Li and Ng, 2000)
- The continuous-time framework (Zhou and Li, 2000)
- Random parameters in a complete market (Lim and Zhou, 2002)
- Random parameters in an incomplete market (Lim, 2005) and random parameters with jumps (ibid)
- Numerical methods for computing time-consistent policies (Wang and Forsyth, 2011)
- Co-integration in a complete market (Chiu and Wong, 2011).

Furthermore Markowitz (1952, 1959) and Tobin (1958) created a model regarding decision maker’s behaviour within a mean-variance framework. Within investment portfolios via their mean returns and the total variance of their returns, such a model would assume decision makers choose a mean-varient efficient portfolio which is a portfolio with the highest mean return for a given level of variance of returns. Likewise the approach is not limited to its usefulness to asset allocation it can be used to evaluate risk versus reward trade-offs for any asset liability management decision for example testing crediting strategies. Additionally such an approach can allow decision makers to evaluate risk versus reward of trade-offs regarding alternative asset allocation. It can even be used to create portfolios of asset classes or individual securities to take advantage of the benefits of diversification when asset class returns perhaps do not perform in perfect correlation. Creating such asset classes in how Swiss Re has implemented this model. In order to fully understand the effects of quality information on asset prices, models were developed and studies were conducted to focus on the implications of interest rates and bond prices (Dothan & Feldman, 1986; Feldman, 1989), as well as portfolio choice (Detemple, 1986; Genotte, 1986). Stock market fluctuations including the predictability of asset returns (Ai, 2010; Barsky & DeLong, 1993; Brennan & Xia, 2001; Timmermann, 1993; Veronesi, 2000; Wang, 1993), impacts of the central bank and stock exchange transparency (Ke, Huang, Liao, & Wang, 2013; Rhee & Turdaliev, 2013). Finally cost of equity capital (He, Lepone, & Leung, 2013), to mention but a few. However many of the aforementioned papers, examine a dynamic setting where learning plays a crucial role.
Regarding equities insurers are generally concerned with drops in market value when they have guaranteed fixed returns; therefore they commonly utilize derivatives that pay off when stock returns are poor. Such option-pricing theory was developed by, Black and Scholes (1973) and Merton (1973). Option pricing is more commonly known as path generating methods and many have been proposed in Acworth et al. (1998) and Moskowitz and Calfisch (1996), see also Glasserman (2003).

3.5 Credit Risk
Credit risk can be found in 1800 B.C. and treated as one of the oldest forms of risk in the financial markets. Caouette, Altman, Narayanan and Nimmo (2008) mentioned that credit models are used by lenders and encompass multiple factors in order to determine the credit worthiness of a company. Caouette et al (2008) determines that such models are objective, consistent, fairly simple and easy to interpret. Consequently credit rating agencies have an important role with the credit market as investors have rules according to such ratings. Credit rating agencies analyse creditworthiness of issuers of debt securities, which indicates the measurement of the probability of repayment. Aforementioned ratings are classified as “investment grades” or “non-investment grade” (Caouette et al, 2008). Top ratings AAA to BBB are treated as “investment grades” compared to rating BB to D which are “non-investment grades”. Additionally ratings are not set by the credit rating agencies as an investment recommendation (Forss, 2013). Therefore within an insurance company such as Swiss Re it is critical to establish itself as rated within “investment grades” to ensure it attracts clients whilst using credit facilities needed to run its business. Thus the field of credit risk modelling has developed rapidly over the past number of years to become a key component in the risk management systems at insurance companies (See Altman and Saunders (1997) for a survey of developments over the past twenty years). As mentioned by both the Federal Reserve System Task Force on Internal Credit Risk Models (FRSTF, 1998) and European Insurance and Occupational Pensions Authority (EIOPA) Solvency II regulatory framework on public disclosures, there exist a wide variety of credit risk models that differ in their fundamental assumptions, such as their definition of credit losses. Accordingly the Directive 2009/138/EC (Solvency II), Article 101, states an insurance company is treated as a going concern for a period of twelve months.
Market liquidity risk is the loss incurred when a market participant wants to execute a trade or to liquidate a position immediately while not hitting the best price (Dowd, 2005). To interpret market liquidity risk, firstly we need to understand the trading mechanism which facilitates liquidity to participants and this mechanism is a financial market. Markowitz, H. (1952), labelled “Portfolio Selection”, the idea that investors should consider the impact of a risky security on a portfolios expected return but also its variability of return. The strategy furnishes the lowest level of risks (variance) for a specified level of expected return. Markowitz’s ideology introduced the notion of the efficient frontier, which represents the set of optimal combinations of risky assets per each level of risk. Certainly, it may be used to evaluate risk versus reward trade-offs for any asset-liability management decision, for example testing alternative crediting strategies or product designs. Based on this credit risk assessment methodologies can be classified into three groups: statistical methods, management scientific methods, and data mining methods (Crook, Edelman, Thomas, 2007). Whilst the initial credit-risk management systems used largely statistical as well as mathematical programming methods (Cox, 1972. Bradley, Fayyad, Mangasarian 1999. Ha, Kwon (2010). Thereafter data mining methods, including decision trees, neural networks, and genetic algorithms have been incorporated for credit prediction (Hu, 2005. Berry, Linoff, 2004). Whilst there are multiple credit prediction models available for data mining techniques, there is no specific technique that can guarantee the global optimal solution, owing to over-fitting, or difficulty in building an optimized model (Hansen, 1999).

Usually an insurance company selects an asset allocation strategy that maximizes the expected ending surplus for a given level of risk or that minimizes the probability of not achieving profit objectives. It is widely recognised that it is a very complicated task to measure point in time default rates in order to determine a corporate default. Recent research illustrates this via the available macro-financial variables as well as firm information is not sufficient to capture the large degree of default clustering present in corporate default data, which is most forcefully made by Das, Duffie, Kapadia and Saita (2007). There is substantial evidence for an additional dynamic unobserved risk factor or contagion dynamics; see McNeil and Wendin (2007), Koopman, Lucas, and Monteiro (2008), Koopman and Lucas (2008), Duffie et al. (2009), Lando and Nielsen (2010), Koopman, Lucas, and Schwaab (2011, 2012), Azizpour, Giesecke, and Schwenkler (2014), and Creal, Schwaab, Koopman, and Lucas (2014). Thus understanding sources of international default risk variation is
important for developing robust risk models at internationally active insurance companies as well as for effective supervision by appropriate authorities.

3.6 Theory Conclusion

Freeman (1984, p 25) determined that an organization’s stakeholders include “groups that affect or are affected by the accomplishments of the organization’s purpose”. Internal and external stakeholders regularly review financial statements as a way of decision making (Scott, 2009). Myers & Read (2001) cited that legislation ensures all insurance companies maintain a certain level of surplus to cover risk. Babbel (2001) has summarised these factors as:

- An insurance company’s financial goal is to create value for its shareholder
- Multiple professional and regulatory bodies such as the Financial Accounting Standards Board, the International Accounting Standards, the Securities and Exchange Commission, the American Academy of Actuaries, and the National Association of Insurance Commissioners have recommended the use of market value or fair value in ALM
- Consolidation within the insurance industry, which resulted from mergers and acquisition activities due to the failure of many insurers. Insurers whom have emerged as winners were more effectively capitalized and better prepared to launch and implement advanced ALM tools.

Kosmidou and Zopounidis, 2004 stated that the ALM process may have various responsibilities in order to manage risks. ALM can be inherently a multi-period challenge, and thus the number of scenarios needed to represent reality increases exponentially, however studies suggested scenario-based approaches for ALM is best to optimize in practice (for example, Bogentoft et al., 2001). There are multiple factors working to advance insurers to move from their past practices of ALM to an era of economic value methodology. Solvency II is considered one such economic methodology which encompasses capital requirements, and also risk management.

Markowitz (1952) mentioned that a primary function of portfolio management was to identify an asset allocation strategy. Many insurance companies today invest their capital either in
fixed interest assets i.e. bonds, or in a variable return asset i.e. a stock or a basket of stocks. Caouette et al, 2008 mentioned that credit models are used by lenders and encompass multiple factors in order to determine the credit worthiness of a company. Both the Federal Reserve System Task Force on Internal Credit Risk Models (FRSTF, 1998) and European Insurance and Occupational Pensions Authority (EIOPA) Solvency II regulatory framework on public disclosures, refer to a wide variety of credit risk models. Accordingly the Directive 2009/138/EC (Solvency II), Article 101, states an insurance company is treated as a going concern for a period of twelve months.

Based upon the above previous research it is evident that insurance companies are utilizing advanced tools/valuations in order to economical manage ALM, to ensure they maximise their stakeholder’ returns.
As mentioned in the method section the goal of an insurance company is to maximise profits
and in order to achieve this goal a company utilizes its asset liability management. I
proposed the below model to support the ALM cycle. I treated the change in external
accounting framework as the instigator of change – due to the significant scrutiny being
currently placed on insurance companies by regulatory bodies globally. Each arrow in the
model represents the ripple effect/impact of a change. Therefore as the change in external
accounting framework changes so to shall the asset and liability management within an
insurance company for example updating of an internal guideline/policy to ensure adherence.
Again the arrow illustrating the next impact of the ALM being the asset allocation (occurring
when the decision is made) and thereafter impacting credit risk (associated costs/ liabilities).
It is very important for an insurance company to understand the impacts change to external
accounting framework has on their business. Thus such a model provides simplicity in its
approach to such change and can be very useful in supporting future ongoing change.

Figure 1: Model explaining impact of external accounting framework
4 Empirical Study

The empirical study intends to find solutions to the research problem whilst based on interviews. The respondents are represented below.

4.1 Interviewees

The table below represents the individuals who agreed to participate in the study and the role they have within the company. It also shows the method used to conduct the interviews as well as when they took place. Due to the nature of business as well as the confidentiality of the responses some of the individual’s names has been removed – unless an agreement was reached (however only upon a personal basis did this occur).

<table>
<thead>
<tr>
<th>Name</th>
<th>Role within the company</th>
<th>Method</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Francois Baligand</td>
<td>Senior Accountant - Economic reporting</td>
<td>E-mail</td>
<td>5-Oct</td>
</tr>
<tr>
<td>Martina Mracna</td>
<td>Senior Accountant - Solvency II Reporting</td>
<td>E-mail</td>
<td>5-Oct</td>
</tr>
<tr>
<td>Bernhard Riniker</td>
<td>Senior Financial Reporting Manager - Switzerland</td>
<td>E-mail</td>
<td>7-Oct</td>
</tr>
<tr>
<td>Martin Strassner</td>
<td>Senior Regulatory Officer - EMEA Regulatory Affairs</td>
<td>E-mail</td>
<td>8-Oct</td>
</tr>
<tr>
<td>Caroline Callanan</td>
<td>Head Carrier Analytics &amp; Branch Control EMEA &amp; APJ</td>
<td>Face to Face</td>
<td>16-Oct</td>
</tr>
<tr>
<td>Lucia Lendvayova</td>
<td>Senior Accountant - Solvency II Reporting</td>
<td>Face to Face</td>
<td>19-Oct</td>
</tr>
<tr>
<td>Not disclosed</td>
<td>Capital and Liquidity Management, Finance Corporate Solutions,</td>
<td>E-mail</td>
<td>2-Nov</td>
</tr>
<tr>
<td>Not disclosed</td>
<td>Capital and Liquidity Management, Finance Corporate Solutions,</td>
<td>E-mail</td>
<td>2-Nov</td>
</tr>
<tr>
<td>Not disclosed</td>
<td>US GAAP Reporting, Finance Corporate Solutions</td>
<td>E-mail</td>
<td>10-Nov</td>
</tr>
<tr>
<td>Veronika Kurliovska</td>
<td>Team Lead - Branch control &amp; non-technical accounting</td>
<td>Face to Face</td>
<td>12-Nov</td>
</tr>
</tbody>
</table>

Figure 2: Respondent list

4.2 Empirical results

The empirical material is derived from questions asked during the interviews (please see Appendix 1). Within these questions are enclosed all areas that I have chosen to analysis to increase the understanding of how changes in the external accounting framework impacts an insurance company’s asset and liability management focusing on the asset side and credit risks.

4.2.1 Changes in External Accounting Framework

According to Strassner “the insurance sector is under increased scrutiny from policymakers. Swiss Re remains concerned about impacts of regulatory developments. Moreover regulators are increasing their focus on compliance, licensing and conduct issues. These could increase
their requirements which become time-consuming and costly. Despite these concerns the momentum for economic, risk based solvency regimes is growing worldwide, for example in Europe the introduction of Solvency II effective 2016. Many other countries in Asia and Latin-America are moving towards Solvency II style regimes. Nevertheless Swiss Re continued its strong engagement in regulatory debates across all regions and key jurisdictions, thus striving to mitigate negative impacts while supporting reforms. Additionally Swiss Re has continued to use its expertise on regulatory issues to help clients cope with such changes”.

The Solvency II Accountant Lendvayova voiced that “after more than 10 years of development, Solvency II will apply across Europe from January 2016. Swiss Re has actively participated in these developments in particular successfully advocating for full equivalence for Swiss insurance supervision system. However national implementation of Solvency II still remains fragmented with clear differences in interpretation emerging. Such a development has increased a sense of uncertainty around the final impact for Solvency II on companies with solvency numbers. Public disclosure is a key concern for our industry as investors and clients seek information and certainty, especially as the industry wide disclosure becomes mandatory in 2017. Nevertheless Swiss Re is preparing steps for a Solvency II review, which must be finished by 2018 and there are signs already that it may be possible to revisit market consistent principles of Solvency II.

Baligand mentioned that “EVM (Economic Value Management) consistently ensures Swiss Re measures the value of all assets and liabilities according to their value to our shareholders. It is my understanding that our shareholders value is based on market consistent valuations. EVM is the framework Swiss Re uses to measure and manage economic value creation. It is generally used to support the business with strategic financial decisions as well as steering decisions. Examples of these include:

- market consistent valuation of all assets and liabilities
- recognition of all profits on new business at inception
- performance segmented between underwriting and investment activities

Our EVM valuation and reporting principles are consistently applied to all assets, liabilities as well as business activities of Swiss Re group. Please be aware that these are always
subject to strict governance guidelines. We assess whether changes to the EVM accounting principles are required, by monitoring developments in other frameworks such as US Generally Accepted Accounting Principles (US GAAP), the European Solvency II framework (Solvency II), the Swiss Solvency Test (SST).”

Finally Callanan suggested that “Swiss Re shall continue to support a move towards economic valuation basis for insurance contracts, with appropriate mechanisms in place to reduce volatility recognised in Income Statements where possible. I anticipate and expect Swiss Re to actively engage and influence global insurance regulators as well as accounting standards bodies to pursue its goal of efficient, non-redundant regulatory and accounting frameworks.”

All other respondents stated that “due to their responsibilities within Swiss Re” were not able to answer my questions posed regarding changes in external accounting frameworks.

4.2.2 Asset & Liability Management
Strassner mentioned that Swiss Re has an “Asset Liability Management Policy within which the Swiss Re Group established a framework where asset liability risks are managed. This management process essentially involves creating investment objectives with corresponding benchmarks to reflect liabilities, risk targets and outlook. All asset liability risk limits are approved by the Swiss Re Group Board. This framework supports the entire Swiss Re Group and is implemented in all performance measurements as well as business steering processes.”

Callanan added that “our Asset Liability Management allows for Swiss RE’s financial and risk objectives to be achieved and/or met thus ensuring the firm can minimise its market risk from an economic valuation. Benchmarks are setup and maintained which is aligned with Solvency & EVM reporting. This ensures that any ad hoc items such as significant transactions, large losses or perhaps other major events are encompassed in this benchmark. Additionally this benchmark ensures from a practical perspective that Swiss Re meets its regulatory capital requirements and as always allows Swiss Re Group to achieve its financial objectives – which is an expectation of our shareholders.”
Strassner expanded the Asset Liability Management policy with “our Foreign Exchange Management Policy helps the Group framework manage foreign exchange risk as well as expands on responsibilities for monitoring and managing foreign exchange risk. Managing such risks allows us to reduce the impact of foreign exchange rate movements on the Group’s consolidated economic and solvent results as well as allowing for us to maintain adequate capital and liquidity positions. Obviously for us foreign exchange risk is managed within the Asset Liability process which involves currency benchmarks. As a global company we operate in international markets and therefore have exposures to foreign exchange rate movements as part of our normal business.”

The capital and liquidity management team delved into the fact that “our foreign exchange management must always comply with accounting policies and regulatory restrictions. Such restrictions will inevitably result in foreign exchange positions that are accepted as part of the decision to do business in certain countries.” Furthermore “a pre-requisite for managing FX is accurate and timely information on FX exposures.”

Here again due to the complexity of the ALM topic many respondents felt they were not able “to answer questions posed”

4.2.3 Asset Allocation

The Capital and Liquidity team had the most insight into asset allocation citing “our Asset allocation aims to ensure Swiss Re’s financial and risk objectives are based upon long term market analysis. This allows us to assess the performance of both strategic and tactical investment risk positions. Like many companies in this industry our asset allocation benchmark is decided upon by comparing alternative portfolios using:

- Long term return expectations
- Resource usage meaning the coverage of both regulatory and our Group requirements
- Risk implications and here we speak about overall risks including interest rates, inflation, FX rates etc.”

Riniker mentioned that “our asset managers complete such performance assessments and this forms part of their mandate. As a result our asset class compositions are heavily reviewed on
a continuous basis and aligned to our Group planning process – which allows for sudden changes in the market to be considered.”

Callanan explained that “constant reviews/ analysis ensure that asset managers adhere to our Group benchmarks whilst maintaining our risk exposures”.

Finally it was mentioned by the US GAAP accountants that “ultimately it is the responsibility of our Group Executive Committee as well as the Board of Directors to ensure our asset allocation is aligned to risk appetite”.

4.2.4 Credit Risk
Firstly Callanan started by stating “to ensure Swiss Re sustains value creation we are committed to engage in risk taking within a controlled environment where possible - resulting in Swiss Re operating within a defined risk appetite and risk control framework. Our Board of Directors has ensured that our Group Internal Audit function has the responsibility to assure processes regarding risk management are appropriately being adhered too”.

“Swiss Re has a Funding Liquid Risk policy” states Strassner, and goes on to mention “this ensures we have defined the risk that we will not be able to efficiently meet our expected and unexpected future cash flow needs without affecting our daily operations or our financial stability as a company”.

The Capital & Liquidity team expanded by explaining that “measuring risk allows us to assess the extent to which we as a company can meet the cash requirements derived from our various predefined stress events”. “Liquidity risk is generally quantified by sources and uses of funding both from the perspectives of normal and under stressed criteria. Our stress conditions are usually defined in stress tests containing time horizons as well as other additional criteria as our board of directors requires. The results of this testing are used to assess liquid adequacy”.

Kurliovska mentioned some major sources requiring funding “requirements across our Group for cash include:

- Claims
• Insurance provisions
• Debt repayments
• Contingent funding obligations
• Asset purchases
• Intragroup items

However the items I’ve mentioned is not comprehensive only for example purposes”. Unfortunately I faced similar issues with not all my respondents being able to support my problem statement and questions citing “I don’t have a full overview of how this part of our Group works”.

4.2.5 Conclusion
“The insurance sector is under increased scrutiny from policymakers. Swiss Re remains concerned about impacts of regulatory developments. Despite these concerns the momentum for economic, risk based solvency regimes is growing worldwide for example in Europe the introduction of Solvency II effective 2016” as confirmed by Strassner.

“Solvency II will apply across Europe from January 2016. However national implementation of Solvency II still remains fragmented with clear differences in interpretation emerging. Public disclosure is a key concern for our industry as investors and clients seek information and certainty, especially as the industry wide disclosure becomes mandatory in 2017” according to one of Swiss Re’s Solvency II accountants.

Thereafter it was mentioned by Baligand that “EVM consistently ensures Swiss Re measures the value of all assets and liabilities according to their value to our shareholders. It is my understanding that our shareholders value is based on market consistent valuations” and therefore “EVM is the framework Swiss Re uses to measure and manage economic value creation”.

Strassner mentioned that Swiss Re has an “Asset Liability Management Policy within which the Swiss Re Group established a framework where asset liability risks are managed”. 
Callanan added that “our Asset Liability Management allows for Swiss RE’s financial and risk objectives to be achieved and/or met thus ensuring the firm can minimise its market risk from an economic valuation. Benchmarks are setup and maintained which is aligned with Solvency & EVM reporting”.

Thereafter the Capital and Liquidity team gave more detail into asset allocation citing “our Asset allocation aims to ensure Swiss Re’s financial and risk objectives are based upon long term market analysis. This allows us to assess the performance of both strategic and tactical investment risk positions”.

Callanan explained that “constant reviews/ analysis ensure that asset managers adhere to our Group benchmarks whilst maintaining our risk exposures”.

Finally the US GAAP accountants stated that “ultimately it is the responsibility of our Group Executive Committee as well as the Board of Directors to ensure our asset allocation is aligned to risk appetite”.

“Swiss Re has a Funding Liquid Risk policy” stated Strassner, and thereafter mentions “this ensures we have defined the risk that we will not be able to efficiently meet our expected and unexpected future cash flow needs without affecting our daily operations or our financial stability as a company”.

The Capital & Liquidity team expanded by explaining that “measuring risk allows us to assess the extent to which we as a company can meet the cash requirements derived from our various predefined stress events” which is completed via “stress testing”.

5 Analysis

The purpose of this study was to investigate and understand, how changes in the external accounting framework impacts an insurance company’s asset and liability management focusing on the asset side and credit risks.

5.1 Changes in External Accounting Framework

Myers & Read (2001), cited that legislation ensures all insurance companies maintain a certain level of surplus to cover risk, which ensures insurance companies, shall be able to fulfil their obligations towards their clients for all outstanding policies/claims. Martin Strassner confirmed this by mentioning that “the insurance sector is under increased scrutiny from policymakers. Swiss Re remains concerned about impacts of regulatory developments”. Freeman (1984, p 25) determined that an organization’s stakeholders include “groups that affect or are affected by the accomplishments of the organization’s purpose”. Internal and external stakeholders regularly review financial statements as a way of decision making (Scott, 2009). Martin additionally mentioned that “increased requirements could become time-consuming and costly. Despite these concerns the momentum for economic and risk-based solvency regimes is growing worldwide for example in Europe the introduction of Solvency II effective 2016”.

Horcher (2005) defined risk and exposure as being closely linked and often used interchangeably describing risk as the probability of loss, whereas exposure is defined as the possibility of loss. In order to prevent losses occurring from risks, various forms of risk management has been implemented, thereby protecting consumers against the risk of insolvent insurance companies – the European Commission ensures risk management is regulated by Solvency II Directive. Lucia as the Solvency II Accountant within Swiss Re confirmed that “after more than 10 years of development, Solvency II will apply across Europe from January 2016. However national implementation of Solvency II still remains fragmented with clear differences in interpretation emerging. Public disclosure is a key concern for our industry as investors and clients seek information and certainty, especially as the industry wide disclosure becomes mandatory in 2017”.

It is widely accepted within the insurance industry that performance assessment shall be faster with an approach focusing on value, as this creates an incentive for insurers to know the economic value of their liabilities in order to correctly price them - thus a standardized
valuation model is required. Babbel and Merrill (1998, 1999) determined that a standardized valuation model is one that consistently and accurately considers key risk factors of all major asset categories including both sides of the economic balance sheet. Swiss Re’s EVM Accountant supported this by mentioning that “EVM consistently ensures Swiss Re measures the value of all assets and liabilities according to their value to our shareholders. It is my understanding that our shareholders value is based on market consistent valuations. EVM is the framework Swiss Re uses to measure and manage economic value creation. It is generally used to support the business with strategic financial decisions as well as steering decisions”.

5.2 Asset & Liability Management

Asset Liability Management is a vital function to insurance companies in the present environment due to volatile global market, proliferation of new financial products and changing environment of regulatory system (Koch and MacDonald, 2009). It can be described as a dynamic and comprehensive framework which helps insurance institutions to measure, monitor and manage the market risk (Consiglio, Cocco and Zenios, 2008). Martin agreed and stated that Swiss Re has an “Asset Liability Management Policy within which the Swiss Re Group established a framework where asset liability risks are managed. This management process essentially involves creating investment objectives with corresponding benchmarks to reflect liabilities, risk targets and outlook. All asset liability risk limits are approved by the Swiss Re Group Board. This framework supports the entire Swiss Re Group and is implemented in all performance measurements as well as business steering processes.”

Kosmidou and Zopounidis (2004) stated that the ALM process may have various responsibilities in order to manage risks such as market liquidity risk management, market risk management, trading risk management, funding and capital planning, profit planning and growth projection. Caroline’s comments supported this by adding that “our Asset Liability Management allows for Swiss RE’s financial and risk objectives to me achieved and/or met thus ensuring the firm can minimise its market risk from an economic valuation. Benchmarks are setup and maintained which is aligned with Solvency & EVM reporting. This ensures that any ad hoc items such as significant transactions, large losses or perhaps other major events are encompassed in this benchmark.“
5.3 Asset Allocation

Markowitz (1952) described “Portfolio Selection” which recommended that an investor should consider the impact of a risky security not only relating to the portfolios expected return, but also its variability of return. The Capital and Liquidity team mentioned that “our Asset allocation aims to ensure Swiss Re’s financial and risk objectives are based upon long term market analysis. This allows us to assess the performance of both strategic and tactical investment risk positions.”

The effects of quality information on asset prices, models were developed and studies conducted to focus on:

- The implications of interest rates and bond prices (Dothan & Feldman, 1986; Feldman, 1989)
- Portfolio choice (Detemple, 1986; Genotte, 1986)
- Stock market fluctuations including the predictability of asset returns (Ai, 2010; Barsky & DeLong, 1993; Brennan & Xia, 2001; Timmermann, 1993; Veronesi, 2000; Wang, 1993).
- Impacts of the central bank and stock exchange transparency (Ke, Huang, Liao, & Wang, 2013; Rhee & Turdaliev, 2013),
- Cost of equity capital (He, Lepone, & Leung, 2013).

Bernhard cited that “our asset managers complete performance assessments. As a result our asset class compositions are heavily reviewed on a continuous basis and aligned to our Group planning process – which allows for sudden changes in the market to be considered.”

Caroline expanded further mentioning that “constant reviews/ analysis ensure that asset managers adhere to our Group benchmarks whilst maintaining our risk exposures”.

5.4 Credit Risk

Market liquidity risk is the loss incurred when a market participant wants to execute a trade or to liquidate a position immediately while not hitting the best price (Dowd, 2005). The Capital & Liquidity team explained that “measuring risk allows us to assess the extent to which we as a company can meet the cash requirements derived from our various predefined stress events”. “Liquidity risk is generally quantified by sources and uses of funding both
from the perspectives of normal and under stressed criteria. Our stress conditions are usually defined in stress tests containing time horizons as well as other additional criteria as our board of directors requires. The results of this testing are used to assess liquid adequacy”.

Usually an insurance company selects an asset allocation strategy that maximizes the expected ending surplus for a given level of risk or that minimizes the probability of not achieving profit objectives. Research illustrates that available macro-financial variables as well as firm information is not sufficient to capture the large degree of default clustering present in corporate default data, which is most forcefully made by Das et al. (2007). There is substantial evidence for an additional dynamic unobserved risk factor or contagion dynamics; see Lando and Nielsen (2010), Koopman, Lucas, and Schwaab (2011, 2012), Azizpour, Giesecke, and Schwenkler (2014), and Creal, Schwaab, Koopman, and Lucas (2014).

Caroline’s feedback supports this by stating “Swiss Re sustains value creation, we are committed to engage in risk taking within a controlled environment where possible - resulting in Swiss Re operating within a defined risk appetite and risk control framework.” “Swiss Re has a Funding Liquid Risk policy” states Martin, and goes on to mention “this ensures we have defined the risk that we will not be able to efficiently meet our expected and unexpected future cash flow needs without affecting our daily operations or our financial stability as a company”.
6 Conclusions

In this last chapter I reflect upon the contribution this study has achieved from the perspective of a theoretical contribution as well as a practical contribution. Furthermore a description of the study's limitations and suggestions for further research are also presented.

6.1 Theoretical Contribution

This study contributed to how changes in the external accounting framework impacts an insurance company’s asset and liability management focusing on the asset side and credit risks. Such frameworks underpin the development of new standards or the evaluation of existing standards of accounting (Potter, 2005). The study offers an appropriate setting to address the purpose, considering insurance companies have experienced significant changes that affect those factors. These factors were found to be predominantly driven by the momentum for economic and risk based solvency regimes both within Europe and globally for example Solvency II as well as EVM. Asset Liability Management is a vital function to insurance institutions in the present environment due to volatile global market, proliferation of new financial products and changing environment of regulatory system (Koch and MacDonald, 2009).

As more regulatory insurance bodies are focusing their attentions to compliance, licensing and conduct issues, I did find that such requirements are becoming time-consuming and costly for insurance companies. Diversification within an insurance company’s decision makers’ approach toward risk can result in varied credit management strategies to maximise profits. Myers & Read (2001), indicated that such surplus requirements can be costly due to some tax systems subjecting investment income to double taxation at the corporate level and thereafter when it is realised on shareholder level, therefore insurance companies try to minimize their surplus amounts. I found this would only be possible if it occurs within a structured organisation where all risk taking decisions regardless if asset or liability related are aligned to guidelines and policies, ensuring compliance within the company as well as externally within this heavily regulated industry. From a theoretical aspect this is supported by Koch and Macdonald 2009 as well as Cummins & Venard, 2008; Fields, Gupta, & Prakash, 2012; Pasiouras & Gaganis, 2013 to name but a few.
6.2 Practical Contribution

The harmonization of accounting frameworks, reporting practices and principles grants a common field of economic competition for all nations, thus proving very profitable for agile companies such as Swiss Re. For an insurance company to be successful in this environment it is important to engage and influence regulatory bodies as well as accounting standard bodies thus ensuring robust frameworks are created and developed. Additionally an insurance company must internally create strong asset goals as well as based its risk objectives on market analysis thereby ensuring it can keep its risk exposures low.

Based on the above, it became evident that the insurance sector is using economic and risk based valuations to manage and steer their business to profitability. In order to undertake this, they use guidelines and policies which are created and designed by their senior management team whom are among the top in their field globally. This study has clearly shown that reality mirrors the theory. However due to the volatility of the insurance market, stress testing supports the ALM requirements which are at the heart of an insurance company.

6.3 Study Limitations

The study has a few limitations; the most prominent drawback is that of the study’s empirical data. I discovered that multiple interviewees due to their specialization within their field were unable to respond to some of my questions regarding ALM management questions, which of course impacted the results negatively due to responses being erroneous. Perhaps this may have been prevented if all interviews were conducted face to face or via telephone. Nevertheless where interviews were conducted with interviewees in the above mentioned formats it gave better understanding which increased the quality of the results. Obviously a disadvantage is that results may be generalized since I chose to undertake a convenience sample. Notwithstanding the above, all aspects are potential factors that could adversely impact the results and should be contemplated when interpreting them.
6.4 Suggestion for further Research

A suggestion would be to focus on internal controls used to implement such changes in external accounting frameworks which impact management accounting. Such a focus would possibly be quite interesting to study and develop further. An approach for future research in order to develop this study would be to strengthen the empirical data by using multiple insurance companies thereby strengthening the reliability of data. Additionally increasing the number of interviews conducted face to face would increase the credibility of the results. Furthermore I have not answered within this study how senior management focus on guidelines and policies impacting financial reporting and accounting within Asset & Liability Management. This area requires more research and was mentioned by multiple respondents during the course of the interviews to this study.
7 Reference table


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Appendix 1 – Interview Questions

Introduction

- What is your name?
- What role/responsibility do you have within the company? For example Statutory Accounting etc.

Changes in External Accounting Framework

- What type of changes to external accounting requirements have you implemented within your role? Please describe in detail as much as possible of the changes you had to do within your role. Any information provided will be treated with confidentiality and any non-publicly disclosed details regarding the company will not be included in the final thesis.
- Does your role become impacted when changes occur in the external accounting requirements? If yes, please describe in what way.

Impact on Asset & Liability Management

- How do the changes you have mentioned above in the external accounting framework impact the asset and liability management of your company?
- Do you believe that the above changes you have mentioned impact your company’s ability to maximise profit through efficient fund allocation of your company? If yes, please describe detail how they impact.
- How does your internal guidelines and policies ensure for successful asset and liability management? Are there any changes you would recommend?

Focus on Asset side and Credit Risks

- Do you feel your company can evaluate risk versus reward trade-offs of asset allocations? If so please describe/ expand.
- Do you feel your company can adequately utilize benefits of diversification within asset classes upon its return? If so and possible please expand.
- Can you please confirm if you agree that the asset allocation strategy of your company maximizes the expected ending surplus for a given level of risk?
• Would you recommend any changes to the asset allocation strategy of your company – to further enhance profit objectives?
• How do you ensure that the company is adequately solvent based on the market liquidity risks faced?
• How do you manage the credit risks of your company as the company is a publicly traded company?