GORDON INSTITUTE
OF BUSINESS SCIENCE

University of Pretoria

The validity of credit rating agencies and their impact on African reinsurers' competitiveness

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447478

A research project submitted to the Gordon Institute of Business Science, University of Pretoria, in partial fulfilment of the requirements for the degree of Master of Business Administration.

9th November 2015

Abstract

The purpose of this analysis is to determine whether the rating criteria used by the credit rating agencies is consistent for African-based reinsurers and non-African companies.

A credit rating is an assessment of a large variety of information that needs to be known about the creditworthiness of the issuer or provider of financial instruments. The credit rating agencies thus contribute to solving principal-agent problems by assisting lenders in "piercing the fog of asymmetric information that surrounds lending relationships and help borrowers emerge from that same fog" (Fong, Hong, Kacperczyk, & Kubik, 2014).

Credit rating agencies have been criticised for their role in the financial crisis of 2008 as they underestimated the credit risk associated with structured credit products. Yet, the financial crisis for emerging markets is a perennial one that they seemingly cannot recover from. Whilst the subject of poorly-rated reinsurance security is endemic to the emerging market, negligible research has been conducted to understand the problem or quantify its impact upon the reinsurance industry.

This report is the first to focus on this specific problem in Africa and has managed to highlight arguments and themes that warrant further research and investigation in order to gain a deeper, more comprehensive understanding of the factors differentiating the African reinsurance sector and negatively impacting their competitiveness in their own market.

Keywords

Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

Neesha Parbhoo

09/11/2015

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Chapter 1: Introduction to the Research Problem

1.1. Research Title

The validity of credit rating agencies and their impact on African reinsurers' competitiveness.

1.2. The Research Problem

The insurance and reinsurance industry is highly geared towards international credit ratings with global market best practice prescribing the utilisation of security with an A-rating or better. As companies are not able to attain a rating higher than the sovereign rating of the country in which it is domiciled, this paper aims to determine whether companies in Africa and other emerging markets, where low sovereign ratings are most prevalent, are adversely affected by the low credit ratings they achieve. Furthermore, that African companies are unable to compete against global companies that operate in their domestic markets.

1.3. Research Motivation

A limited amount of research has been conducted on the ability of African reinsurers to generate income and remain profitable benchmarked against well-capitalised multinational corporations who are their direct competitors. Moreover, Ferri & Liu (2013) argue that the insurance sector in Africa has the potential to develop into a highly technical, sophisticated and knowledgeable industry, but is facing constraints largely owing to the poor credit ratings issued by international commercial rating agencies. The general convention of the reinsurance industry is to utilise reinsurer capacity with ratings of A- or better, limiting the scope in Africa solely to The Republic of Botswana. With the sovereign ratings of the other African countries at BBB+ or below, the reinsurers domiciled here face adverse selection that could potentially hinder their growth and sustainability (Chen, Wen, & Wu, 2015). "In following what is considered to be global best practice, we have inadvertently created an anti-competitive environment for our African companies" (Ellis, 2015)

Studies conducted on the behaviour of markets between 2007 and 2009 have shown that, not only has the subprime crisis led to a global recession, but the long-term effects of the collapse on consumer confidence in rating agencies has had a profound impact on purchasing strategy (Berkmen, Gelos, Rennhack, & Walsh, 2012).

It has been observed that the news events related to bailouts of individual banks from the UK have had a contagion effect throughout the period for most of the countries investigated (Chevapatrakul & Tee, 2014). Their results reinforced the argument presented by Berkmen, Gelos, Rennhack, & Walsh (2012) that contagion is an outcome of the risk perception of financial markets solely dependent on the behaviour of investors or other financial market participants. This implies that investment into a company will be determined by perception and encouraged by market participants' trading behaviours.

With credit rating agencies having established a perceived position of influence in the financial services industry and local insurers being swayed by consensus and following the lead of global market participants, the competitiveness and sustainability of poorly-rated reinsurers based in their home markets are seemingly limited.

1.4.   Research Aims and Objectives of the Study

This paper aims to identify and assess the link between credit ratings and the creditworthiness of reinsurers and to establish whether these rating agencies influence clients' perceptions and subsequent utilisation of reinsurer security domiciled in developed and emerging economies, particularly in Africa. The purpose of this analysis is to determine whether the credit ratings are an accurate measure of the creditworthiness of the reinsurers, and whether they are impairing the competitiveness of African-based companies.

1.5.   Scope of the Research

In classifying particular features that attract investment into a corporation, it was found that qualitative attributes were most influential and concurrently most problematic to measure, however the commercial strength (or credit rating) of an issuer was established as the formative element in decision-making (Gatumel & Lemonye de

Forges, 2013). The commonality running through the theory was the power of solvency and balance sheet strength in evaluating a company's creditworthiness.

With solvency the key dimension, open-source data and published third-party information was used to extract the relevant financial data and attempt to establish the relationship between solvency as a measure of creditworthiness and issued credit ratings.

1.6. Outline of the Research Project

Chapter 1: Introduction to the Research Problem

This Chapter defined the objective and motivation of the research project. By outlining the key aspects governing the study, this chapter charts the progression of this paper.

1.6.2 Chapter 2: Literature Review

The literature review is an intensely researched chapter focussing on the background of the problem and the impact as studied by previous researchers. It begins by introducing the concept of reinsurance and its role in the global insurance industry, then establishes its position in the African context. The role and purpose of credit rating agencies follows, with a breakdown of the areas of criticism, and impact of the ratings on reinsurance companies. The chapter is concluded by a summary of findings that draws the various elements together.

1.6.3 Chapter 3: Research Hypothesis

The research hypothesis is outlined in this Chapter, relating to the objectives and aims outlined in Chapter 1.

1.6.4 Chapter 4: Research Design

The research design of the study is described in this Chapter. The nature and research approach of the study is described, followed by the relevance of the population and sample. The limitations of the study are highlighted in this section.

1.6.5 Chapter 5: Results

Chapter 5 synthesizes the results of the statistical analysis conducted.

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1.6.6. Chapter 6: Discussion of Results

In Chapter 6, the delineated results in Chapter 5 are discussed. The limitations and implications are further explored and the relevance of the study is discussed.

1.6.7. Chapter 7: Summary of Findings

Finally, in Chapter 7, the study is summarised and suggestions for further research are noted.

1.6. Conclusion

In this chapter the research problem was briefly described, emphasised by the resulting motivation for the study. The research aims and objectives were identified, followed by the significance of the study for current academic literature. The scope and pertinent concepts were also defined. Each chapter was then briefly described to note the flow of the study.

The chapter that follows provides the relevant theory base pertaining to the research problem.

Chapter 2: Literature Review

2.1. Introduction

The literature review that follows serves to provide an introduction to the research problem by providing an intensively researched chapter focussing on the background of the problem and the impact it has had historically. Each section begins by defining concepts, then identifying roles and functions, followed by impact and criticisms. The chapter is concluded by a summary of findings that contextually ties the preceding elements together.

2.2. Reinsurance

2.2.1. What is reinsurance?

Reinsurance is a means of hedging the risk of insurance. In emerging markets where insurance portfolios are highly volatile and unbalanced, the reinsurer plays an important role in maintaining the stability and sustainability of the insurer (Guan & Liang, 2014). In a financial services market that offers cash deposits, zero-coupon bonds, stock and numerous risk-bearing investment vehicles, navigating the optimal combination of investment and reinsurance could determine the difference between an insurer's profit and foreclosure. The model built by Guan and Liang combines utility functions and constant relative risk aversion to calculate optimal utility. The sensitivity analysis carried out suggests that as long as the net cost of reinsurance is lower than the cost of capital, reinsurance capacity should be maximised.

The value of reinsurers became recognised after 2008 as strong evidence emerged showing reinsurers played a critical role in the crisis of 2008 by virtue of their participation as investors in mortgage-backed securities. Of course, this evidence – like much about the financial crisis – is still uncertain and requires further research and assessment. However insurance did contribute to systemic risk in the recent global financial crisis and the mitigation of the crisis was carried out by the under-appreciated reinsurance market (Schwarcz & Schwarcz, 2014). The study carried out by Daniel and Stephen Schwartz substantiates the view that one of the most important ways that insurers attempt to mitigate their exposure to catastrophe risk is by ceding much of that

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risk to reinsurers, who are comparatively well situated to diversify catastrophe risk around the globe. This value of reinsurance is reflected not only in insurers' business operations, but also in their regulatory treatment: insurers are generally able to avoid accounting for policyholder risk through reserves and capital requirements when that risk is transferred to a reinsurer (Borschied, Gugerli, James, & Straumann, 2013).

The global reinsurance market has seen an unprecedented wave of mergers and acquisitions driven by an increase in the demand for reinsurance arising from a frequency of insured property and liability claims as well as a surge in global losses from natural catastrophes such as hurricanes and earthquakes. The role of the reinsurer has never been this pivotal yet the value is not notably transferred to the reinsurers as the abundance of capacity in the global market has driven pricing down and squeezed reinsurer margins down to minimum levels (Lin, Peterson, & Yu, 2015). This capacity has of late been from non-traditional sources as pension and provident fund managers, for example, have recognised the return on investment reinsurance potentially offers. With diminished confidence in stocks and bonds post 2008, their interest in the reinsurance arena has piqued and their cost of investment into the reinsurance market has been relatively inexpensive (Standard and Poor's, Global Reinsurance Highlights - 2015 Edition, 2015).

Insurers played a central role in the 2008 global financial crisis. As a result of these events, insurance regulation is in a state of flux worldwide. Historically, insurance regulation has centred predominantly on the goal of protecting policyholders by ensuring that insurers have sufficient financial capacity to pay claims. The financial crisis has raised the possibility that insurance regulation should also be attuned to limiting the prospect that insurance-related shocks could systemically threaten the larger financial system and the real economy (Chiu, Lee, & Lee, 2013).

With a focus on the asymmetric information problem in the reinsurance market, a study carried out by Chen, Wen and Wu (2015) utilised data from the rating agency AM Best and the National Association of Insurance Commissioners (NAIC) to determine whether adverse selection exists between various reinsurance markets. In trying to understand the selection process undertaken by insurers in identifying their preferred reinsurers, the study found that affiliated insurers employing reinsurance within the group

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displayed the same level of adverse selection as non-affiliated insurers. The results were consistent with another study carried out by Garven and Grace (2007) and supported the view that adverse selection in reinsurance markets exists and is primarily due to reputation and peer comparison (Chen, Wen, & Wu, 2015). Insurers are geared toward A- or higher ratings and their commitment to fulfilling this basic requirement is somewhat unfaltering.

An insurer's solvency ratio is viewed as a critical measure of its ability to fulfil its financial obligations. A solvency ratio is defined as the ratio of the company's debt to equity or total debt to assets and provides an assessment of the likelihood that the company will continue accumulating its debt obligations (Rauch & Wende, 2015).

Regulatory framework prescribes minimum capital requirements insurers have to fulfil in order to remain solvent in the long term. Reinsurers play an indispensable role as this legislation allows for the transfer of risk and subsequent capital relief for insurers, whilst mitigating loss volatility and acting as a transmission mechanism for financial shocks in the economy. The demand for reinsurance is mainly driven by firm size, affiliation and organisational form, with insurers ceding more to reinsurers the higher their financial leverage (Garvin, Grace, & Hilliard, 2014).

While reinsurance purchasing may increase the cost to an insurer, it significantly reduces the balance sheet volatility. Effectively this translates into reinsurers bearing the debt obligation of the insurance company and the reinsurer balance sheet stability supporting the insurer's financial position. In essence, the exposure of an insurance company to reinsurer failure is difficult to quantify due to a lack of reliable measurement criteria. This possibility of default on the debt obligation, is referred to as counterparty credit risk (Gregory, 2012).

2.2.2. Reinsurance in Africa

Historically, emerging markets, such as Africa, have related their independence to locally incorporated or state-owned monopolies as this formed a foundation of self-sufficiency (Outreville, 2013). The size of these markets and lack of expertise and capacity led to a reliance on foreign, developed market knowledge and insurance and reinsurance capacity. Jean Francis Outreville (2013) suggests that developing economies are not

merely consumers of this capacity, but suppliers as well, normarily with capital support from a parent company. The quandary he identified was that the capacity existed within the market, however the majority of citizens of the country were low-income earners who prioritised essentials over insurance. This led to a demand for low-cost and essential services such as automobile and third-party liability insurance, which are highly volatile classes of business. The local insurance and reinsurance companies were then exposed to unbalanced portfolios forcing them to retract their local capacity and thereby limiting their premium and portfolio growth within their domiciled territories. The gap in the usage of formal financial products in the African market may reflect a lack of need or desire for financial services in general as the level of insurance penetration is far below the global average (Demirgüç-Kunt, Klapper, & van Oudheusden, 2015).

A further study by Outreville (2013) examined the relationship between insurance and economic development which is termed the insurance-growth nexus. The study concluded that insurance was a significant determinant in the growth and sustainability of an economy. Further exploration of the theory revealed that the evolution of insurance and reinsurance has been exacerbated by the growth of economies (Chiu & Lee, 2012). The study revealed that as income per capita increased, the demand for comprehensive insurance increased and subsequently the need for more effective and beneficial reinsurance arose.

The effects of the above circumstances created a reliance on insurers and reinsurers in foreign, developed markets to provide both capacity and knowledge to the emerging insurance economy. The amount of insurance and reinsurance demanded increased progressively with income development, with significant reliance on specific markets which were regarded as specialists in the field, mainly originating from Bermuda and Europe (Garvin, Grace, & Hilliard, 2014). As the developed market reinsurer was viewed as a knowledgeable partner historically, an adverse selection process was born, driving the placement of the business into these trusted markets and neglecting to consider other market contenders from both the emerging and developed sectors.

Studies on asymmetrical information and adverse selection have been mainly focused on insurers and have neglected the role of reinsurers to a great extent. A study conducted by Hong & Yan (2015) determined that the highly volatile classes of business

such as automobile and third-party liability insurance still dominate the emerging market scope of cover primarily due to the cost of insurance and the low levels of income in these economies. The reason for the basic insurance cover is regulation as most countries legislate for compulsory motor and third-party liability insurance when purchasing a vehicle. The conclusion that can be drawn from these studies is that over decades of financial evolution, the requirement for comprehensive insurance cover in emerging markets has not progressed further than bare essentials. (Manikowski & Yang, 2015)

Tying back to the perception of independence, it has been established that the per capita spend on insurance and subsequent spend on reinsurance increases with growth in the per capita GDP of the country, non-proportionally (Chiu, Lee, & Lee, 2013). This particular study examined the growth of insurance premiums and their sources, and linked this growth to affluence and wealth. The study suggests that insurance cover is linked to social and political status at varying income levels. Within an economy that is developing, the need to rise above the crowd becomes dire, and every facet of exhibition of wealth and affluence is exhausted, including the use of insurance facilities. This has resulted in the higher income earners spending a more on comprehensive insurance and the subsequent development of the reinsurance market.

The micro determinants for growth in a financial system are not well understood. The perception of low demand for financial services in low-income territories has been tested in numerous studies using data from Africa, India, China, Brazil, Indonesia and Russia. One such project carried out by Shawn Cole, Thomas Sampson and Bilal Zia (2011) in India and Indonesia interestingly exposed a strong correlation between financial literacy and demand for financial services. Subsidy played a huge role in the employment of financial services in India, as citizens were encouraged to open bank accounts and not feel financially constrained by doing so as the costs were covered by the financial institution. The action in itself initiated educational conversations and the general financial literacy of the communities was improved. The simple savings account prompted inquiry into insurance solutions and spurred on the micro-insurance sector for crop and farming insurance (Cole, Sampson, & Zia, 2011).

Further to this, and corroborating the above results, it was found that corporate governance and formal institutions increased the demand for financial structure in emerging economies (Claessens & Yurtoglu, 2013). Effective corporate governance translates into greater access to funding, lower cost of capital and more favourable results for all firms' stakeholders. The capital benefit is particularly relevant for insurance firms as their capital determines the volume and complexity of risks they are able to undertake in the market.

To this end, corporate governance in emerging markets has been questioned and analysed as the perception is that institutions are weaker in these countries (Waweru, 2014). A report entitled *Emerging markets research: Trends, issues and future directions* (2012) collates results of surveys and analyses performed by researchers around the world to decipher patterns, trends and themes endemic to these markets. The fields of study under discussion include economics, finance and international business relations and explores the effects of market efficiency, risk-adjusted returns on risk premiums, exchange-rate volatility, international business strategy, foreign direct investment and institutional governance.

Whilst the individual studies' results were discussed at length, the unanimous view on emerging markets and trends was that growth markets of the world occupy positions of latent power, with underlying strength in corporate governance, product sophistication, highly tactile recovery strategies and semi-automatic inclusion into a globally established, regimental financial environment, having the benefit of inheritance from their first-world counterparts (Kearney, 2012).

While various theorists believe emerging markets are on this forward trajectory, there are the cynics that are of the opinion that the emerging sector will always be lagging behind claiming that financial constraints restrain the ability of these markets to innovate and catch up to the technological frontier (Gorodnichenko & Schnitzer, 2013). Fan, Titman, & Twite (2012) argue that the imbalance of capital and wealth between the developed and emerging markets requires correction from the developed sector. Responsibility for the dissimilarities need not be apportioned however and those in the position to right the wrong should be accountable. They argue that the fundamental

resources underpinning the profitability and success of many companies can be traced back to the emerging markets, and reciprocity in itself could shift the current imbalance.

As numerous studies have proven the causal relationship between insurance sector development and economic growth, it stands to reason the driving forces behind insurance sector development warrants attention. Whilst few of these drivers are structural, the development of the industry can be attributed to policy variables, financial access and sovereign perception of the region (Feyen, Lester, & Rocha, 2011). The impact of a developed insurance and reinsurance market within an economy assists in determining these drivers.

It is well known that insurance companies are among the largest and most important financial institutions. In recent times the role of insurance companies has gained in significance. At the first United Nations Conference on Trade and Development (UNCTAD) in 1964 it was stated that "a sound national insurance and reinsurance market is an essential characteristic of economic growth". The United Nations Conference on Trade and Development is governed by its 194 member states, including the 54 African countries, where representatives can engage in discussion aimed at creating a balanced global economy. The World Investment Forum is facilitated by UNCTAD every two years with the objective of highlighting challenges and investment opportunities to international investors interested in partnerships for sustainable, equitable development in growth markets (About Us: UNCTAD, 2015).

The organisation invests significantly in research concerning globalisation and creating a balance between developed and emerging economies. One of their many facets concentrates on technology and stimulating innovation to improve the competitiveness of developing economies. Their insurance programme is aimed at building capacity and capability through training and negotiation with international markets to bring the emerging insurance sector on par with the rest of the world. In a publication focussed on the African insurance sector, the analysts concluded that the skill and underwriting capability of African insurers and reinsurers were on the same level as the international markets, however capacity and access to markets gave these firms a distinct disadvantage in the arena (Association Marocaine des Investisseurs en Capital, 2012)

One of the main assets of first-world economies is a developed financial system as it enables productivity gain and long term growth. The entire financial system, including the insurance companies, has undergone significant change in the last two decades. The most important changes are demographic changes, the regulatory framework Solvency II, or Solvency and Assessment Management in South Africa, the increasing number of catastrophes, the cyclical nature of the insurance and reinsurance industry, and the financial crisis, in which some major financial institutions have experienced problems (Manikowski & Yang, 2015). Whilst all of these changes have affected the entire economy, the effects are most pronounced for insurance and reinsurance companies. Moreover, the financial industry is facing some major long-term trends as key changes will be manifested as disintermediation, deregulation of the financial system, the securitisation system, globalization of financial markets, and harmonisation of financial, accounting, and other regulations.

2.2.3. The Impact of Reinsurance

Over the past 15 years the reinsurance market has evolved substantially yet the 150 reinsurance companies that received an estimated 195 billion US dollars in premiums in 2007 (Standard and Poor's, 2011) are still sharing a global reinsurance premium pool of roughly 200 billion US dollars in 2014 (Standard and Poor's, 2015). The market share of the top ten reinsurers grew from 56 to 65 percent between 2003 and 2009, with a jump to 74 percent in 2014. Given the reduction in capital employed and the simultaneous downgrading of reinsurers over the past decade, the trend seems to be an alignment towards the highly rated, highly regarded players in the industry. 2011 was a particularly turbulent year for catastrophic events globally, as well as volatile stock market conditions, record low investment yields and the downgrade of both US and European sovereign debt. These severe economic conditions formed the foundation of many downgrades as the capital bases of these companies were weakened, severely impacting the global reinsurance industry (Lin, Peterson, & Yu, 2015).

It has already been established that the most beneficial insurer-reinsurer relationships are the long-term ones as transactions take place between two well-informed players who trust each other. Several studies have shown the impact of quality capacity backing reinsurance treaties on pricing and policy restrictiveness. Lin, Peterson, & Yu (2015)

synthesized the results of various studies to produce a non-exhaustive list of the factors deemed relevant by insurers when selecting reinsurers. These included financial strength of the company, historical profits, capital injections, self-discipline, protection of the franchise value and consumer demand. As this decision is subjective, the solution potentially lies in regulation at a national or global level (Bodoff, 2011). The establishment of regional, government-linked reinsurers, especially in emerging markets speaks to this theory as compulsory cessions are apparently necessary to prevent all reinsurance premiums from going offshore.

Recent research has investigated the interrelationships between the banking and insurance industries and whether these interrelationships pose systemic risk to the broader economy. The reliance on reinsurance as a risk mitigation solution raises two important issues. First, what are the determinants of reinsurance counterparty relationships? Second, what is the linkage between these relationships and insurer financial performance? (Gatumel & Lemonye de Forges, 2013)

2.2.4. Reinsurer Counterparty Credit Risk

Counterparty relationships are measured in terms of reinsurance premiums ceded and reinsurance recoverable on paid and unpaid losses. Commercial creditworthiness ratings have long been used for the measurement of risk of default. Park & Xie (2014) suggest that reinsurers play a discerning role in intra-industry connectedness providing a valuable soundboard given their accumulation of data and risk information, providing stability to the insurer balance sheet through capital enhancement as well as loss mitigation. The study showed that there is a positive correlation between reinsurance utilisation and efficiency of the firm, as well as a positive non-linear relationship to the firms' performance. Reinsurance utilisation not only enhanced risk diversification and capital constraint, but a long-term, focussed reinsurer-insurer relationship has proven to improve information asymmetries between counterparties (Park & Xie, 2014).

Given the intertwined nature of the insurance and reinsurance industry, global exposure to counterparty credit risk may weaken the industry as a whole as systemic risk exists at either industry of economy levels (Schwarcz & Schwarcz, 2014). Park & Xie (2014) suggest that counterparty credit risk is the single failure that threatens the collapse of

the insurance industry due to the accumulation of large losses and the additional impact of retrocession claims that would ensue. This statement cannot be ratified as the quantification and modelling of counterparty risk remains difficult.

The probabilities of default within the market can either be based on historical behaviour or deduced via a model of the underlying credit assessment criteria. This criteria is however subjective in many instances, and may vary from one institution to the next, rendering points of comparison almost indeterminable (Gatumel & Lemonye de Forges, 2013). A focus on default correlation is just as challenging as there are numerous effects that may be taken into consideration. Limiting the factors may inhibit the scope of the study whilst incorporating too many elements may render the results meaningless.

In an attempt to identify the scope of insurers most exposed to reinsurer counterparty risk, a study was carried out by Cummins, Feng and Weiss (The global market for reinsurance: Consolidation, capacity and efficiency, 2000) that evidenced the fact that large insurers tended to rely on less reinsurance than smaller firms due to their stronger financial ability and superior diversification. However, large insurers have a higher degree of concentration in reinsurance counterparties, since they may transact heavily with a few leading reinsurers.

The research suggests that firms with higher concentration in unaffiliated reinsurance are less efficient than those firms with higher concentration in affiliated transactions. It has been evidenced that the concentration in foreign reinsurers is positively related to primary insurer performance, with the cost efficiency effect somewhat degraded by foreign unaffiliated reinsurance. (Cummins, Weiss, & Zhijian, 2012) The overall benefits of foreign reinsurance may arise from the favourable tax position of some foreign reinsurers and from the specialised expertise and risk management efficiencies offered by prominent foreign firms, however this is offset by a higher degree of counterparty risk.

Current practice in the property-casualty insurance industry for buying reinsurance and for managing reinsurance credit risk is complex, multifaceted, and varies across individual companies. As a result, any broad summary of current practice is bound to be

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subject to caveats, limitations, and exceptions. Cummins, Weiss, & Zhijian (2012) state that in addition to evaluating reinsurers based on general creditworthiness, companies also typically monitor their accumulated amount of credit risk exposure to any individual approved reinsurer. This means that a property and casualty insurance company may, through its various reinsurance arrangements, accumulate a significant amount of exposure with one particular reinsurer. This exposure may encroach upon a previously defined risk limit set by the company. As a result, the company may choose to de-risk and halt further transaction with the reinsurer, even if the reinsurer would otherwise be creditworthy (Garvin, Grace, & Hilliard, 2014).

Neil Bodoff highlights the options a company has in evaluating the reinsurer counterparty risk. He proposes the company could choose to evaluate reinsurance credit risk using expert analysis to determine a non-market-based appraisal value for reinsurance credit risk; compare its appraisal of the price of risk versus the market's price of risk; or determine whether or not it has an edge over the market in estimating reinsurance credit risk. The alternate is to utilise rating agencies such as AM Best, Standard and Poor's and others who publish rating statistics that could be used to quantify credit risk via non-market based appraisal value methodology. "One ought to use caution in using rating agency tables of default probabilities because they often relate to corporate default events in general, rather than applying specifically to reinsurance default." (Bodoff, 2011)

2.3. Africa as an emerging market

Africa is seen as the continent of growth and development. Confidence in policies and institutions needs to be established for investment to flourish. This confidence can only come from an adherence to stringent regulation and compliance (Waweru, 2014). The study concluded that audit quality and company performance were the driving forces behind quality corporate governance and African companies had demonstrated a sincere adherence to policy and procedure with compliance being of utmost importance.

Focussing on South Africa in particular, political and environmental factors have influenced the downgrade of the country's sovereign rating from April 2010 to June

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2014. However a comparison with Brazil, Russia, India and China reveals that the situational factors are not vastly different. (Hammoudeh, Liu, Sari, & Uzunkaya, 2011) Table 1 shows the sovereign ratings of Brazil, Russia, India, China and South Africa (BRICS).

Table 1: Sovereign Rating of BRICS Countries

Country	S&P	Moody's	Fitch
Brazil	BB+	Baa3	BBB
Russia	BB+	Ba1	BBB-
India	BBB-	Baa3	BBB-
China	AA-	Aa3	A+
South Africa	BBB-	Baa2	BBB

Compiled from data accessed at http://www.tradingeconomics.com

(last accessed 11/10/2015)

The data above suggests that South Africa is fairly rated amongst its peers, but raises questions about China's ratings being higher than the rest and the validity of the ratings presented above. It is common for the ratings of analogous emerging markets such as BRICS to be grouped together and their ratings adjusted simultaneously, bringing into question the justification behind it. Concurrently, if this rationale was accepted and widely used, it may imply that China has changed playing fields and may no longer be comparable to the other BRICS economies.

South Africa is hovering between planes as the banking regulation enforced by South Africa is regarded as one of the world's best and most effective (Aron & Meullbauer, 2013), yet the political situation and unrest draw the country toward third world status (Archer, Biglaiser, & DeRouen, 2007).

In comparison to international markets, African companies in the insurance and reinsurance arena are exposed predominantly to African risks. The quantum or magnitude of an event arising from earthquake, fire, tornado, severe flood and other catastrophic perils in Africa is dramatically lower than their international counterparts (Borschied, Gugerli, James, & Straumann, 2013).

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A study into the most costly insurance losses worldwide from 1970 to 2014 revealed that hurricane Katrina, hitting the United States, Gulf of Mexico and Bahamas in 2005, was the most expensive disaster since 1970. It incurred insured losses amounting to approximately 78.64 billion U.S. dollars (Statista, the statistics portal, 2015). The earthquake and tsunami, which struck Japan in March 2011, caused insured losses amounting to 40 billion U.S. dollars and total losses reaching approximately 210 billion U.S. dollars.

The differential being explained by much of the loss being insured directly by government. The most expensive insured loss emanating from a natural disaster in Africa was the Ethiopian famine which lasted from 1983 to 1985. An estimated 400 000 lives were lost, yet the insured loss cannot be calculated and the most appropriate means of estimation is the value of foreign aid and donation received by organisations volunteering in the region. This is valued at approximately 150 million U.S dollars.

An article entitled *Emerging countries affected by insurance gaps* by Munich Re (2013) supports these findings as they believe that the frequency of losses is concentrated in emerging markets such as Africa and Asia. Their study of natural disaster loss data over a period of 32 years showed that 79 percent of fatalities occurred within emerging markets. However, due to the lack of sophistication in insurance, the insured losses emanating from these regions represented less that fifteen percent of worldwide insured paid losses. "To reduce the gap in natural catastrophe loss funding in emerging and developing countries, sustainable insurance-based coverage programmes have to be developed and implemented. The insurance and reinsurance industry has the worldwide experience and internal capacity to break new ground in these developing markets" (Emerging countries affected by insurance gaps, 2013).

These insurance gaps signify a huge market opportunity for the reinsurers domiciled in emerging markets, as the insurance and reinsurance industry needs to innovate, and tailor solutions to bridge that gap. There is evidence to support that premise that the knowledge and understanding exists within the markets as these reinsurers insure their balance sheets through international well-rated reinsurers through retrocession (Borschied, Gugerli, James, & Straumann, 2013). While reinsurance is the insurance protection of an insurance company, retrocession is reinsurance for a portfolio of

reinsurance contracts. Reinsurance portfolios can comprise several thousand contracts that may be contingent on the same events, underwritten by a single reinsurer, which makes retrocession a complex decision.

Further to this, and corroborating the above results, it was found that corporate governance and formal institutions increased the demand for financial structure in emerging economies (Claessens & Yurtoglu, 2013). Effective corporate governance translates into greater access to funding, lower cost of capital and more favourable results for all firms' stakeholders. The capital benefit is particularly relevant for insurance firms as their capital determines the volume and complexity of risks they are able to undertake in the market.

To this end, corporate governance in emerging markets has been questioned and analysed as the perception is that institutions are weaker in these countries (Waweru, 2014). A report entitled Emerging markets research: Trends, issues and future directions (2012) collates results of surveys and analyses performed by researchers around the world to decipher patterns, trends and themes endemic to these markets. The fields of study under discussion include economics, finance and international business relations and explores the effects of market efficiency, risk-adjusted returns on risk premiums, exchange-rate volatility, international business strategy, foreign direct investment and institutional governance.

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While various theorists believe emerging markets are on this forward trajectory, there are the cynics that are of the opinion that the emerging sector will always be lagging behind claiming that financial constraints restrain the ability of these markets to innovate and catch up to the technological frontier (Gorodnichenko & Schnitzer, 2013). Fan, Titman, & Twite (2012) argue that the imbalance of capital and wealth between the

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developed and emerging markets requires correction from the developed sector. Responsibility for the dissimilarities need not be apportioned however those in the position to right the wrong should be accountable. They argue that the fundamental resources underpinning the profitability and success of many companies can be traced back to the emerging markets, and reciprocity in itself could shift the current imbalance.

2.4. Credit Rating Agencies

2.4.1. The role and function of credit rating agencies

Creditworthiness ratings provided by commercial vendors have influenced both the flow of capital into emerging markets and the risk premiums associated with commercial businesses in these countries (Hong & Yan, 2015). Sovereign ratings were found to be highly sensitive to developments in the global financial arena as the mechanisms of providing private capital to developing countries have evolved significantly beyond syndicated loans over the last two decades (Afonso, Furceri, & Gomes, 2012). On average, the current credit ratings of emerging economies and their domiciled businesses remain below those of first-world economies and investors are often instructed to invest only in entities that meet or exceed a minimum credit rating standard.

Credit ratings are an important tool in assessing financial stability and determining the level of access borrowers should be granted to loans and debt. Globalization in the investment market, coupled with diversification in the types and quantities of securities issued, presents a challenge to institutional and individual investors who must analyse risks associated with both foreign and domestic investments (Langhor & Langhor , 2010). Credit rating agencies provide investors with objective analyses and independent assessments of companies and countries that issue such securities.

Levich, Majnoni, & Reinhart (2012) categorise the functions credit rating agencies perform into four sections: (1) providing independent, specialised, superior information; (2) undertaking extensive, sometimes complex, research to mitigate costs to their users; (3) affording greater credence to financial representation; (4) formation and evolution of the regulatory policy framework. The first two functions operate synchronously as the rating agencies develop skills and expertise in their field and continuously evolve

their systems and databases with changes in the financial environment. The intensity and complexity of their research incurs severe costs which the subscribing companies would have to fund should they employ credit analysts within the corporation. The central hub of data and analytics allows for a highly focussed study of the risk environment and the ability to react timeously to sensitivities in the market. This independence and comprehensive knowledge base allows for concentrated, impartial and sound reporting from the credit rating agencies.

Credit ratings are expressed on a scale of letters and figures. The Standard & Poor's rating scale is, for example, as follows: AAA (highest rating), AA, A, BBB, BB, B, CCC, CC, C, D (lowest rating). Modifiers are attached to further distinguish ratings within classification. Modifiers used by Fitch and Standard & Poor's are pluses and minuses, whilst Moody's uses numbers to distinguish their ratings.

In their book Langhor and Langhor (The rating agencies and their credit ratings: what they are, how they work, and why they are relevant, 2010) confirm that credit rating agencies and their output play a unique, important role in realigning the information asymmetries that are endemic to the capital market. "Credit rating agencies offer a product that is an opinion about creditworthiness based on a set of minimum standards and exercises objectivity, consistency, comparability and transparency"

There is sufficient evidence to fortify the belief that rating agencies have created a dependence and reliance that is difficult to falter. They are in a position of power and have managed to entrench their offering into all facets of the financial services industry. (Fong, Hong, Kacperczyk, & Kubik, 2014)

2.4.2. History and Background

In his paper Lawrence White investigates the origin and history of rating agencies, dating back to 1909. "With an initial focus on railroad bonds, rating agencies have evolved into a central information hub across all financial and insurance related industries." However Amtenbrink & De Haan (2011) discovered that the origin of credit rating agencies went back even further. They uncovered evidence that Henry Varnum Poor first published the *History of Railroads and Canals in the United States* in 1860, drafting the framework for securities analysis and reporting. Standard Statistics was established in 1906, publishing

corporate bond, sovereign debt and municipal bond ratings, later merging to form the Standard and Poor's Corporation.

In the year 1900 John Moody and Company first published Moody's Manual which published basic statistics and general information about stocks and bonds of various industries. This became a national publication in 1903 and was widely regarded until the stock market crash of 1907. In 1909 Moody began publishing *Moody's Analyses of Railroad Investments* which added significantly to the analytical information about the valuation of securities. Expansion of this idea in 1914 led to the creation of Moody's Investors Service.

The Fitch Publishing Company was founded by John Knowles Fitch in 1913 with his publications entitled *The Fitch Stock and Bond Manual* and *The Fitch Bond Book.* The current rating system was introduced by him in 1924 which utilises the AAA through D method of rating. The study was focussed on these three agencies as "the three largest competitors share roughly 95 percent of the market. Standard & Poor's Ratings Services and Moody's Investors Service have 40 percent of the market while Fitch Ratings holds 15 percent" (Pagano & Volpin, 2010)

Langhor & Langhor (2010) highlight the three agencies: Standard and Poor's, Moody's and Fitch, as being the only reliable source of ratings with AM Best a close fourth- their revenues vastly lower than the top three. Alfred .M. Best, founded the A M. Best Company in 1889, operating out of a single room in New York's financial district. Rapid growth soon necessitated a move in 1974 to the company's present global headquarters in Oldwick, New Jersey. Best expanded into a worldwide operation and established a London office in 1997, which in 2010 was divided into two separate companies, A.M. Best Europe Rating Services Limited and A.M. Best Europe Information Services Limited. Whilst Standard and Poor's, Moody's and Fitch are primarily focussed on investor and security ratings, AM Best have a prevalence in insurance and reinsurance ratings and are widely used in the African market together with Standard and Poor's (Waweru, 2014).

2.4.3. Credit Rating Agencies and Sovereign Ratings

Countries are issued sovereign credit ratings which are evaluations of the general creditworthiness of a country or foreign government. Sovereign credit ratings analyse the overall economic conditions of a country taking into account the volume of foreign, public and private investment, capital market transparency and foreign currency reserves. Sovereign ratings also include a study into political conditions such as overall political stability and the level of economic stability a country will maintain during times of political transition (Afonso, Furceri, & Gomes, 2012). The sovereign rating is often the prerequisite information institutional investors require to determine whether they will consider investment into specific companies, industries and classes of securities issued within the specific country.

"Sovereign ratings are particularly important for emerging economies because risk is greater and information can be of lower quality than for developed economies. Investors pay close attention to sovereign ratings when investing capital in emerging countries. Credit risk changes are more frequent in emerging economies and large changes can occur quickly and unpredictably." (Alsakka & Gwilym, 2012)

The relevance of sovereign bond ratings has grown recently as trade, inflation, growth, and bond default are all affected by these ratings. It can be concluded that positive and negative credit news affects both the own-country exchange rate and other countries' exchange rates. (Archer, Biglaiser, & DeRouen, 2007). According to a study by Richard Cantor and Frank Packer, the sovereign rating of a country is dependent upon eight variables: per capita income, GDP growth, inflation, fiscal balance, external balance, external debt, economic development and default history. It is still unknown how these factors are evaluated, weighted or how changes in the variables affect the overall positioning. However the impact of credit rating announcements have shown to be stronger for below investment grade counties than for their higher rated counterparts. (Cantor & Packer, 1996)

In principle, the sovereign credit rating industry could help mitigate the congestion externalities common to world capital markets that arise from the failure of market participants to internalise the social cost of external borrowings. An analysis conducted

by Larrain, Reisen, & Von Maltzan (1997) concluded that changes in sovereign credit rating have a significant impact on international financial markets. In line with the earlier study by Cantor and Packer, they found highly significant movements in international market behaviour when emerging-market sovereign bonds are put on review with a negative outlook. "Our findings imply that the sovereign rating industry has the potential to help dampen excessive private capital inflows into the emerging markets with negative rating announcements" (Larrain, Reisen, & Von Maltzan, 1997)

These considerable differences are noted in the market reactions to sovereign rating events between emerging and developed economies, indicating higher levels of confidence in developed economies. "Understanding how credit rating agencies determine country ratings is difficult based on the secretive nature of these agencies." (Alsakka & Gwilym, 2012)

The question of whether sovereign ratings are related to or a fair predictor of financial crises, in line with previous studies, is now revisited. Sy (2004) found that ratings were not a predictor of currency crises and were generally downgraded ex-post. However, an interesting observation that arose from the study was the likelihood of currency crisis and the implied probability of sovereign default were not correlated in emerging markets post-1994 as they were in developed markets. Sovereign distress can restrict access to international funding by up to fifty percent and lagged ratings and ratings changes, including negative outlooks and credit watches, are useful in anticipating sovereign distress.

Changes in sovereign debt ratings and outlooks affect financial markets in emerging economies far greater than developed markets. The sensitivity to changes in sovereign ratings has been a popular field of study and various theorists have come to the same conclusion – developed economies are highly resilient to change and display an air of stubbornness to rate adjustments (Alsakka & Gwilym, 2012). There tends to be a more volatile response to rating adjustments in emerging markets internally, as well as from their international trading partners. The effects of rating and outlook changes are stronger during crises, in non-transparent economies, and in their neighbouring countries. Upgrades tend to take place during market rallies, whereas downgrades occur during downturns, providing support to the idea that credit rating agencies contribute

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to the instability in emerging financial markets, both positively and negatively (Kaminsky & Schmukler, 2002).

Concentrating on particular regions, in-depth research has been conducted in Asia, South America and the Middle East. Similarly to the proposition posed for Africa, there have been numerous questions raised around credit rating agencies having aggravated the East Asian crisis by excessively downgrading its resident countries. Mora (2009) stated that ratings were sticky rather than cyclical as it was observed that ratings exceeded predicted ratings before the crisis, matched predicted ratings during the crisis period, but did not align with predictions in the period ensuing the crisis. "Therefore it is questionable that ratings exacerbate the boom-bust cycle if they are simply reacting to news, whether macroeconomic or market" (Mora, 2009).The research once again brought into question the issue of lagging and found that ratings were reactive to non-macroeconomic factors such as a country's default history.

If the sovereign credit ratings history provided by independent ratings agencies affects domestic financial sector development and international capital inflows to emerging countries, it is important to understand its impact. One particular research paper that was of interest regarding this topic utilised a comprehensive dataset of sovereign credit ratings from Standard and Poor's from 1995–2003 for 51 emerging markets. Kim & Wu (2008) examined financial sector development and the influence of sovereign credit ratings amendment, within a panel data estimation framework. By holding constant various economic and corporate governance factors identified as limitations in the literature, the study indicated a strong correlation between sovereign credit rating measures and financial sector developments. It becomes evident that sovereign credit ratings are an important element in encouraging financial intermediary development and in attracting capital flows. Local currency ratings stimulate domestic market growth but have discouraged international capital flows while short-term ratings impede all forms of financial developments and capital flows (Kim & Wu, 2008).

Further exploration into the view that market reaction is an effect of other external factors, rather than credit ratings resulted in a study that examined political business cycle theory and its relevance to private foreign lenders investing into developing economies. From a purely political perspective, it was found that credit rating agencies

downgraded developing country ratings more often in election years, and do so by approximately one rating level. Agencies and stakeholders view elections negatively, often increasing the cost of capital to developing democracies prior to an election (Block & Vaaler, 2004). Ten years later a study conducted by Erdem & Varli (2014) analysed possible causes for the instability in sovereign ratings of emerging markets and identified a similar pattern of downgrading and a pessimistic outlook prior to and following a political election in the country. Corroborating the evidence presented a decade earlier, the study showed that sovereign ratings dropped one level in most cases.

Financial institution behavioural studies have been somewhat limited to the banking industry, but the findings are applicable to the insurance and reinsurance sector. To further assess the potential impact on lower-income countries and identify cyclical swings, the relationship between banks' capital asset requirements and private sector ratings was examined. A commonality between the insurance and banking sectors is that the company ratings are capped by the sovereign ratings of the countries in which they are domiciled and are habitually very strongly aligned in emerging economies. This exposes company rating to the cyclical movement of sovereign ratings and creates a vulnerability to foreign and political instability. Owing to this association with the sovereign rating, the capital asset requirements of banks are insensitive to movements in quality of assets widening the gap between banks of equal financial strength located in higher and lower income countries (Alfonso, 2012). Applying the theory to reinsurers, it would appear that basing their claims paying ability and reserve requirement on private sector ratings could have negative effects on the financial strength of the reinsurer balance sheet impacting availability of capacity as well as and cost of reinsurance.

Clearly the balance sheet strength of the company is of great significance with respect to shareholder value as well as to gain access to debt. The assessment of this balance sheet quality, in isolation from the sovereign rating on the country of domicile, is expected to deliver a level of credence and companies seek to achieve this through optimal investment and risk management. Concurrently, these very companies are subject to the sovereign ratings and risk being evaluated at a significantly lower investment grade. In an attempt to disentangle the relative contribution to firms'

ratings of sovereign risks and of the individual firms' performance indicators employed by rating agencies, Ferri & Liu (2013) examined the strength of companies' balance sheets controlling for the "country ceiling effect", then assessed their ratings within the emerging country they were based in. The following conclusions were drawn from the study: (1) the contribution of sovereign risk to firm ratings is high in developing countries but is negligible in developed countries; (2) irrespective of sovereign rating the information content of ratings for firms in developing countries is much smaller than for firms in developed countries; and (3) cross-country indicators of information quality help explain these discrepancies, but they do not entirely account for them (Ferri & Liu, 2013).

Brooks, Faff, & Hill (2010) have examined differences in sovereign rating levels across the credit rating agencies employing sovereign ratings data for 129 countries spanning the period 1990–2006. It was found that there was a general lack of uniformity in these sovereign ratings, however, disagreement tended to be within one or two notches on the rating scale. Once again they realised that the three credit rating agencies studied each identified a different set of key drivers to assess its sovereign credit ratings, with significant overlap in the underlying data. This implies that the ratings are based on similar sets of publically available data, with varying frameworks of analysis overlaid, varying weightings applied, and consequently varying outcomes. One factor that differentiates the rating of sovereigns in comparison to the rating of firms is the concept of "willingness to pay." This reflects the potential risk that the sovereign may not be willing to pay if it considers the social or political costs to be too great (Brooks, Faff, & Hill, 2010).

A number of qualitative factors have to be considered in order to sufficiently analyse this element such as institutional strength, political stability, fiscal and monetary flexibility, and economic vitality (Chen, Huang, & Shen, 2014). The most crucial aspect of assessing a government's willingness to pay is country's track record of honouring its debt, and this may also be the most elusive to quantify. These qualitative factors are then amalgamated with quantitative factors such as the level of debt and official international reserves, the composition of debt, and interest costs to determine the sovereign quality of a country.

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2.4.4. Reinsurance and the impact of credit rating agencies

White (2010) highlights the impact of ratings at various levels. At the level of the individual consumer, the terms and conditions governing a loan will be based upon the credit score calculated and a poor credit rating may result in a declinature of funding. At the corporate level, primarily due to the cost and resource consumed by undertaking the function, it is usually in the best interest of a company to appoint a credit rating agency to rate their debt. Major credit agencies, the top three regarded as being Moody's, Fitch and Standard and Poor's (Amtenbrink & De Haan, 2011), perform this rating service for a fee and aim to eliminate the possibility of asymmetrical information and bias. Investors typically investigate credit ratings issued by these and other local and international credit rating agencies in their pre-investment analysis of a company.

Credit rating agencies play a vital role in financial markets through the compilation of credit risk information and distribution thereof to the market. "These reports are utilised by issuers, investors and regulators in risk assessment and subsequent decision-making. Credit ratings also play an important role in financial market regulation as several regulators allow financial institutions to use credit ratings from approved agencies when calculating their capital requirements" (Baghai, Servaes, & Tamayo, 2013).

Empirical studies on asymmetric information have mainly focused on primary insurance markets, but comparatively little attention has been given to reinsurance markets. A study conducted by Manikowski & Yang (2015) focussed on asymmetric information in the reinsurance market and the effect of perception on investment into these entities. Credit rating agencies were credited with improving the perception of reinsurers' ability to finance their debt, particularly in emerging markets, as investors felt "more comfortable utilising new capacity backed by stable ratings."

In order to understand the consequences better, it is vital to understand the effect rating agency opinions and decisions have on market perception and reaction. Altman and Rijken (2013) make use of surveys to determine the use of credit agencies and the relative stability implied by the ratings. Investors' opinions are explored to gauge the confidence afforded to these ratings. Their findings support the belief that rating

agencies hold a powerful position in determining investor confidence. In line with a vast number of reports studied, the shift in investment or disinvestment is highly correlated to movement in agency ratings, with varying lapses in time.

The sensitivity to such changes is particularly high in the banking sector and studies suggest that banks tend to take on lower credit risk and have a lower probability of default. Risk is reduced by sufficient capital, but for banks with market power this effect is significantly weaker. As a result banks take a more conservative stance and are highly responsive to changes in credit ratings to mitigate their associated risk. (Agoraki, Delis, & Pasiouras, 2011)

2.4.5. Reinsurance and the impact of sovereign ratings

Having identified the existence of these differences, it becomes necessary to understand the rationale behind them. It has already been established that financial integration and globalization of capital markets have facilitated the capital inflows/outflows among countries and ratings are critical to this process. It has been found that, on a macroeconomic level, the most relevant factors are Budget Balance/Gross Domestic Product, Gross Domestic Product per capita, Governance Indicators and Reserves/Gross Domestic Product (Erdem & Varli, 2014).

The differences in impact of rating changes in developed and emerging markets have been supported by a number of studies. These differences can be explained, in part, by leveraged domestic financial systems, stronger credit growth and higher levels of short-term debt (Berkmen, Gelos, Rennhack, & Walsh, 2012). Countries exhibiting these traits were more likely to suffer a larger effect on economic activity following a rating change. For emerging markets, trade is affected strongly, with the caveat that those exporting food commodities are being less hard hit. (Berkmen, Gelos, Rennhack, & Walsh, 2012)

Christopher, Kim and Wu (2012) carried out an investigation to quantify the permanent and transitory effects of rating changes on bonds and investment movements in nineteen developing countries over the period from 1 January 1994 to 1 July 2007. They found that stock and bond market co-movements within a region were positively correlated to sovereign ratings information. "Sovereign ratings and outlooks tend to be positively related to regional stock market co-movements suggesting that there are

positive rating spill over effects whereby upgrades provide common benefits for neighbouring countries in the region, however downgrades would lead to investors shifting funds from the downgraded market into the surrounding region." (Christopher, Kim, & Wu, 2012) This study showed the impact of rating changes was significant even before the global financial crisis.

Bearing these spill over effects in mind, the ability of governments from developing countries to access international credit markets comes into question. The probability of market access is not influenced by a country's frequency of defaults, and that default, if resolved quickly, does not reduce significantly the probability of tapping the markets. A study conducted by Gelos, Sahay, & Sandleris (2011) found that market access was not determined by macroeconomic factors such as trade openness, a country's links with the rest of the world and liquidity; but rather a country's vulnerability to shocks and the perceived quality of economic policies and institutions. It stands to reason that emerging markets should be categorised and their creditworthiness quantified differently from their first-world counterparts. The developed business world has seemingly recognised the need for an altered set of criteria to assess the creditworthiness of developing economies, bringing into question the view of credit rating agencies on the matter.

2.4.6. Credit Rating Methodology

Traditionally credit rating agencies relied on a combination of qualitative and quantitative analysis, overseen and finalised by a rating committee to establish entity ratings. With the advent of computerised models, there has been an emphasis on technical quantitative studies based on publicly available data to eliminate the reliance on potentially skewed or biased input data. The more widely accepted statistical model suggests greater transparency, yet Baghai, Servaes, & Tamayo (2013) highlight that the performance of the various models is highly influenced by external factors and market conditions. They conclude that no model significantly outperforms another given the parameters and regional data available.

Further investigation (Amtenbrink & De Haan, 2011) into the methodologies used revealed that:

- Standard and Poor's ratings are geared to assess the forward-looking probability of default. They provide no assessment of time, mode resolution or recovery in their result.
- Moody's ratings focus on the expected loss, incorporating the probability of default, and the expected recovery rate. Also finalised by committees.
- Fitch's ratings seek to provide a hybrid view as analysts calculate the probability of default and simultaneously account for the possibility that past track record and future performance may differ.

Assessing the creditworthiness of an issuer essentially means evaluating the ability and willingness of the issuer to honour its debt obligations. A corporate issuer such as a reinsurer may have varying circumstances to consider and these factors are likely to be financial and non-financial. Broadly the categories to be reflected upon are key performance indicators (whether shareholder or parent company enforced), economic, geographical and political influences, management and corporate governance frameworks, and competitive differentiators. Identifying a relationship between the various factors influencing a credit rating and the actual rating is nearly impossible as some of the criteria are neither quantitative nor quantifiable. Further to that, the variables may be interrelated and weighted and the exact formula could differ significantly from one rating to another.

In rating an individual debt issue, such as a corporate or municipal bond, Standard & Poor's typically uses, among other things, information from the issuer and other sources to evaluate the credit quality of the issue and the likelihood of default. In the case of bonds issued by corporations or municipalities, rating agencies typically begin with an evaluation of the creditworthiness of the issuer before assessing the credit quality of a specific debt issue (Standard and Poor's, 2015).

"Standard and Poor's calibrates criteria through various means including measuring default behaviour across sectors and over time, applying common approaches to risk

analysis, and using a common set of macroeconomic scenarios associated with the different rating levels" (Standard and Poor's, 2011).

AM Best's employs an interactive rating process engaging the entity's management team in on-going discussion. The primary analyst from AM Best facilitates the relationship, monitors the investigation and compiles a comprehensive report of findings that is submitted to a review committee. The analyst is charged with the account and is responsible for the monitoring of changes and amendments to the entity profile going forward (AM Best, 2015).

Moody's claims to have developed a multidisciplinary or universal approach to credit rating that considers all opinion, judgement and perception associated with the entity being examined. The 360 degree view of the company is stress-tested against varying professional scenarios to determine the optimal credit rating for that company. The principles highlighted by Moody's are an emphasis of qualitative data, a focus on the long-term performance, global consistency, predictability of cash flow (Moody's, 2015).

Fitch has a standardised procedure for the preparation of ratings and with all judgements overseen by a rating committee. The rating committee follows a stringent code of conduct and consists of a minimum of four analysts. All new ratings are monitored for a three-month probationary period before the rating is accorded (Fitch Ratings, 2015)

The general rating process designed and executed by Fitch is outlined in the figure below:

Figure 1: The Credit Rating Process
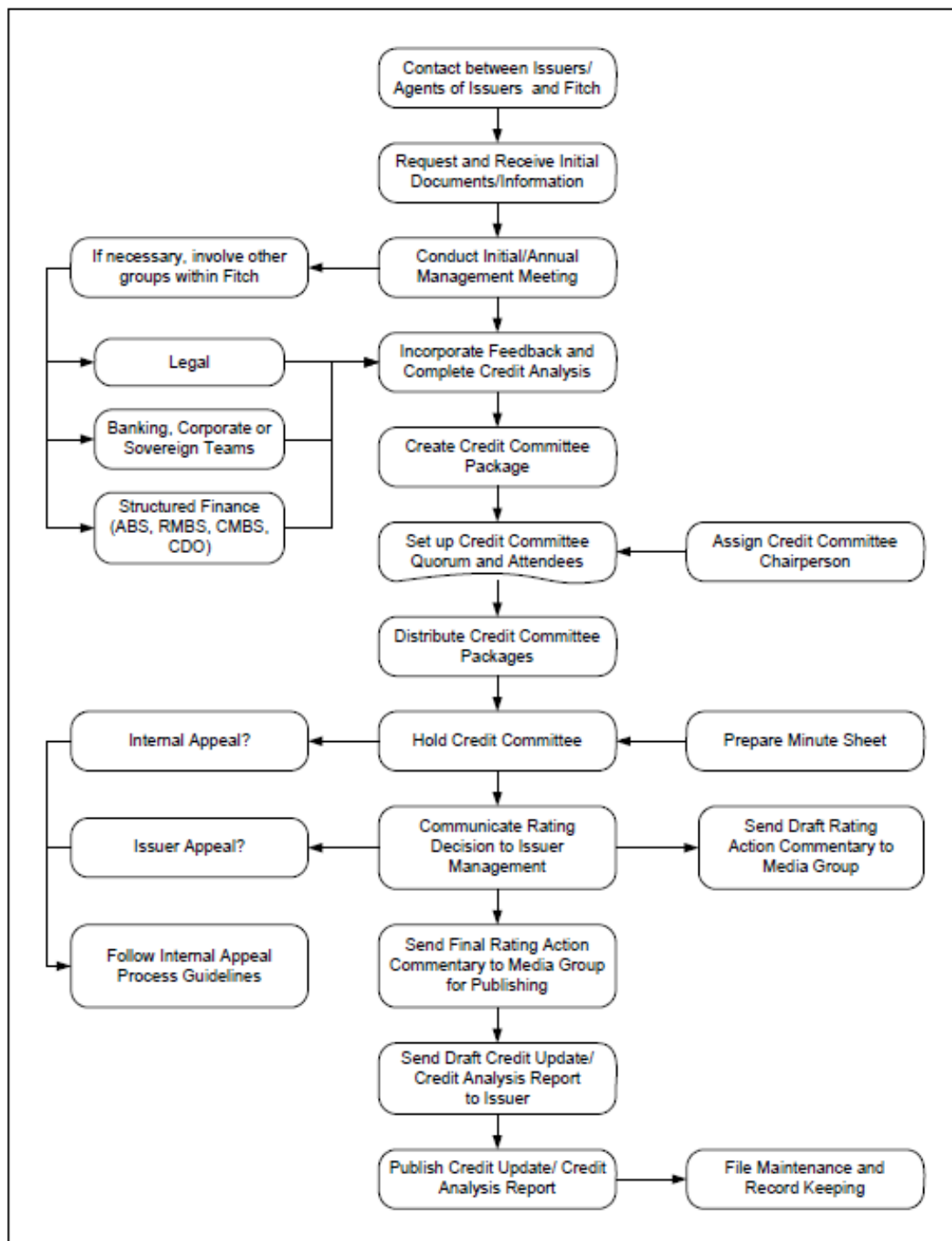
2.4.7. Criticisms of credit rating agencies

Credit rating agencies have been criticised for their role in the financial crisis of 2008 as they underestimated the credit risk associated with structured credit products. According to the International Monetary Fund (IMF), over seventy percent of all private residential mortgage backed securities issued in the United States from 2005 to 2007 that were rated AAA by Standard & Poor's are now rated below BBB-, i.e. below investment grade. "While downgrades are expected to some extent, a large number of them, in particular when they involve several notches at the same time or when the downgrading takes place within a short period after issuance or after another downgrade, are evidence of rating failure." (Pagano & Volpin, 2010)

The criticism of credit rating agencies extends to their sovereign rating activities. They were initially condemned for failing to predict the Asian crisis, then for exacerbating the crisis when they downgraded the countries' sovereign ratings in the midst of the financial turmoil. More recently it has been argued that the downgrading of European sovereigns of countries like Greece, Ireland, Portugal and Spain has intensified the fiscal problems still being suffered.

In the absence of a governing body or definitive criteria for their ratings analysis, rating agencies methodologies were being questioned and in 1934 the United States Securities and Exchange Commission (SEC) was created with the intention of creating a standardised framework and guidelines to govern agencies' reporting. Langhor and Langhor (2010) observed that the Securities and Exchange Commission also introduced regulation compelling banks and several other institutions to utilise credit agency ratings and conduct fewer independent analyses.

Despite the agencies underpinning their assessments with a disclaimer such as "[A]ny user of the information contained herein should not rely on any credit rating or any opinion contained herein in making any financial decision", the convenience of the service provided by the rating agencies translated into substantial subscription to these reports. (Pagano & Volpin, 2010)

Following further criticism regarding the consistency of ratings from one agency to another, the Securities Exchange Commission created and developed the concept of a

Nationally Recognised Statistical Rating Organisation (NRSRO). The aim was to ensure that an agency prescribed as an NRSRO followed stringent and consistent methodology, displayed a depth of financial industry knowledge and demonstrated a high level of integrity. Financial institutions were then encouraged to fulfil their capital requirements by investing in securities that received favourable ratings by one or more of the NRSROs. At the point of inception only three agencies were prescribed into this category: Standard and Poor's, Moody's and Fitch. The NRSRO was recognised and declared the sole regulated category valid for the determination of capital requirement and solvency (White, 2010). The increased demand for ratings services by investors and securities issuers combined with increased regulatory oversight has led to significant growth and expansion in the credit ratings industry.

Only four other firms were designated as NRSRO's in the years following. In the late 1990s Fitch merged with IBCA of London, and acquired market competitors Thomson BankWatch and Duff and Phelps Credit Ratings Company. As a result of these mergers and acquisitions the original three rating agencies had re-established their initial positions as prescribed NRSRO's by the year 2000. (Fong, Hong, Kacperczyk, & Kubik, 2014) AM Best has since been the prescribed into the category, meaning only four of the current 156 active credit rating agencies have attained international status. (Baghai, Servaes, & Tamayo, 2013)

Rating agencies are private sector companies with no global governing body that regulates ratings or ratings methodology, the NRSRO framework is merely a code of conduct. Partnoy (2002) argues that success of the major credit rating agencies can be attributed in part to having benefitted from an oligopoly market structure, reinforced by regulations that depend exclusively on credit ratings issued by NRSROs. The oligopoly structure creates high barriers to entry whilst generating economic rents for the agencies even when they are delivering poor performance. Various proposals have been put forth since the financial crisis of 2008 with the objective of reforming credit rating agencies, particularly NRSROs. A number of these initiatives have been directed at increasing the level of competition amongst agencies by reviewing, restructuring and carefully monitoring the process of NRSRO designation, while a few proposals suggest eliminating the NRSRO designation entirely.

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A report on the role and function of credit rating agencies in the operation of the securities markets was released by the United States Securities and Exchange Commission in 2012 focussing particularly on barriers to entry and conflicts of interest within the credit rating industry. It highlights the concerns raised through various channels, and suggests four potential methods of reducing barriers to entry: (1) clarification of the current regulatory recognition criteria for rating agencies; (2) instituting strict timelines for the evaluation of applications for regulatory recognition; (3) recognising rating agencies that operate in specific markets and/or territories differently; and (4) exploring viable alternatives to the current SEC rules and regulations regarding NRSRO designation. There have been no formal legislative amendments since.

Due to the nature of their business, their primary market consisted of investors and their revenue stream was somewhat limited by this. In order to widen its scope within the financial services sector, the credit rating agencies shifted their business model from an "investor pays" model to an "issuer pays" one (White, 2010). The rationale behind this decision is still vague however this gave rise to potential conflicts of interest and raised concerns about the consistency and integrity of the ratings (Xia, 2014). The original business model was based on the premise that the investor subscribed to the agencies and paid for the credit rating reports of the securities they intended to invest in. The change in policy allowed for the issuer of these securities to remunerate the agencies for their own credit ratings.

Xia (2014) examines the differences in quality of ratings from an issuer-paid rating agency (Standard and Poor's) in comparison to an investor-paid rating agency, the Egan-Jones Rating Company (EJR). This study showed that S&P's ratings become more responsive to credit risk following an adverse event. These results differ from the existing literature documenting a deterioration in the incumbents' ratings quality following by an issuer-paid agency. However Xia concludes that the dependency on rating agencies by both issuers and investors has become fiercely evident.

With respect to potential conflicts of interest, the report on the role and function of credit rating agencies in the operation of the securities markets (2012) suggested three alternative ways to manage the issue: (1) implement procedures when the issuers are paying for their own ratings; (2) prohibit or severely restrict direct contact between

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rating agency analysts and subscribers; or (3) implement stringent procedures in the case of agencies developing ancillary fee-based businesses. The Securities and Exchange Commission did not rule on the matter.

The elusive nature of credit rating criteria has led to the development of several independent models built by analysts and statisticians to establish a systematic relationship between variables and ratings. One such dynamic rational expectations model of the credit rating process incorporates three critical elements of this industry: (1) the rating agencies' ability to misreport the issuer's credit quality, (2) their ability to issue unsolicited ratings, and (3) their reputational concerns. "We analyse the incentives of credit rating agencies to issue unsolicited credit ratings and the effects of this practice on the agencies' rating strategies." (Fulghieri, Strobl, & Xia, 2013) The study shows that, under certain conditions, the credit rating system and changes in ratings have led to more stringent controls regarding investment. In essence, investors have tightened the controls surrounding their funds based on the ratings applied by agencies. The reaction time between adverse changes in ratings and divestment has moved from four years during the period 1995-2000 to two years for the period 2005-2010

The sheer magnitude of the crisis is only brought into perspective by exploring the symptomatic repercussions that followed. One of the most notable being the Dodd-Frank Street Reform and Consumer Protection Act of 2010. The law was initially proposed by the Obama administration in 2009 and signed into federal law by President Barack Obama on the 21st July 2010. The report on the role and function of credit rating agencies in the operation of the securities markets (2012) states the aim of the Act is "to promote the financial stability of the United States by improving accountability and transparency in the financial system, to end "too big to fail" scenarios, to protect the American taxpayer by ending bailouts, to protect consumers from abusive financial services practices, and for other purposes."

Amongst various issues addressed by the Act, the key components include the consolidation of regulatory agencies, comprehensive regulation and transparency of financial markets, consumer protection reforms, tools to manage financial crises and measures aimed at increasing international standards and cooperation including proposals related to improved accounting and tightened regulation of credit rating

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agencies. The Dodd-Frank, as it is commonly known, has been criticised by many, some arguing it was not enough to prevent another financial crisis or more bailouts, and others arguing it went too far and unduly restricted financial institutions.

The underlying matter most failed to recognise or appreciate was the critical failure of the financial industry framework, and the depth at which the solution had to be applied (Stout, 2011).

2.4.8. Credit Rating Agency Failure

The indicators of financial collapse were apparent years before the actual event, however blind faith in a trusted system allowed for it. Dubbed as "Europe's Enron", the Parmalat bankruptcy in late December 2003 was regarded as the biggest financial collapse in European corporate history. The collapse of Parmalat exhibits a particular agency problem that has been at the forefront of recent economic literature, namely the conflicts of interest between shareholders and the issuer-pays model adopted by credit rating agencies. Buchanan & Yang (2009) investigated the incentives facing the controlling shareholders and the opportunistic behaviour that resulted. Their research uncovered several instances that alluded to mismanagement, accounting irregularities and rating agency regulatory failure being the primary reasons behind highly-rated companies reaching bankruptcy.

American International Group Incorporated (AIG), a large insurance company, received a massive bailout during the financial crisis in response to difficulties arising from the company's multifaceted exposure to residential mortgage-backed securities. After a bailout from the Federal Reserve, the company is back in business. The Lehman Brothers failure combined with news about Merrill Lynch in September 2008 elicited a pronounced negative impact (Li, Madura, & Richie, 2013). All three of these companies were associated with AAA rated paper and displayed no indication of the balance sheet failure that later ensued.

Studies conducted on the behaviour of markets between 2007 and 2009 have shown that, not only had the subprime crisis lead to a global recession, but the effects on market purchasing strategy have also been significant. It has been observed that the news events related to bailouts of individual banks from the UK have had a contagion

effect throughout the period for most of the countries investigated (Chevapatrakul & Tee, 2014). Their results reinforced the argument presented by Berkmen, Gelos, Rennhack, & Walsh (2012) that contagion is an outcome of the risk perception of financial markets solely dependent on the behaviour of investors or other financial market participants. This implies that investment into a company will be determined by the perception and behaviour of market participants' trading behaviours.

2.4.9. Integrity of ratings from the top agencies

Having understood the complexity of risk quantification and assessment of counterparty risk, it is essential to examine the credibility and integrity of credit rating agencies issuing reinsurer ratings. The volumes of research around this topic consistently question the autonomy and almost blind reliance bestowed upon credit rating agencies, particularly Standard and Poor's, AM Best, Moody's and Fitch. (Fulghieri, Strobl, & Xia, 2013)

Credit rating agencies essentially provide two services. First, they offer an independent assessment of the ability of issuers to meet their debt obligations, thereby providing reducing information costs for investors and insurers. Second, they offer monitoring services which enable them to influence and recommend corrective measures to avert downgrades to ratings (Amtenbrink & De Haan, 2011).

Cane, Jodar, & Shamir (2012) conducted a comprehensive study focussed on the accountability of credit rating agencies. Their research concluded that credit rating agencies were considered to have displayed shoddy performance given the financial crises, and lacked accountability due to regulatory failure. Although the article poses biased opinion against rating agencies, their success in providing an independent assessment of creditworthiness and reducing information costs for investors and insurers could not be denied. In analysing the role and function of rating agencies, the research aptly revealed the benefits rating agencies provide to their subscribers. The article, however, does continue to evidence the lack of accountability and highlights the fact that those utilising published ratings do so fully aware of the agencies' disclaimers.

Credit rating agencies have developed a reputation for being irresponsible and are said to have unjustifiably exacerbated countries' existing problems by issuing downgrades, announcing negative outlook forecasts and merely failing to predict balance sheet

failure. Their actions, or lack thereof as the instance may be, have resulted in inflationary market rates, prohibition of access to funding and undermined the value of institutions such as the International Monetary Fund and European Union (Berkmen, Gelos, Rennhack, & Walsh, 2012).

An interesting view on credit rating agencies was their role as "gatekeepers". "Rating agencies are hypothesized to possess leverage, based on their unique gatekeeping role with regard to investment funds sought by corporations and governments" (Sinclair, 1994). Fourteen years before the event that threw credit rating agencies into disrepute, there was a view that the processes employed in judgements and assessments was flawed and controlled in an attempt to usurp power in beneficial arenas, much to the detriment of emerging markets.

Continuing on this notion of gate-keeping, Frank Partnoy (2006) published a report entitled *How and why credit rating agencies are not like other gatekeepers* which defines rating agencies as gatekeepers by virtue of their verification role in the financial market and their power over the companies they assess. The differences they exhibit to other gatekeepers lie in the regulatory deform that exists and the conflicts of interest they are faced with on an on-going basis. Credit ratings continue to present an unusual paradox: rating changes are important, yet they possess little informational value. Credit rating agencies are not widely respected among sophisticated market participants, yet their franchise is increasingly valuable. The agencies argue that they are merely financial journalists publishing opinions, yet ratings are far more valuable than the opinions of even the most prominent and respected of financial publishers.

In a critical evaluation of the integrity of credit rating agencies, the concept of 'catering' was introduced. As the security issuer has the ability to choose the ratings to purchase, there surfaces an induced selection effect as the issuer can shop for the most favourable rating. Griffin, Nickerson, & Tang (2013) examine whether rating shopping or rating catering is characteristic of the credit rating market. Their research uncovered data that suggested rating agencies adjusted their findings positively when their competitors made lenient assumptions on specified entities. The research also evidenced that rating agencies, particularly Standard and Poor's and Moody's, exhibited rating catering behaviour in harmful downgrades of securities they experienced disagreements with.

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Using data from Moody's Financial Metrics, Kraft (2015) found that these adjustments were favourable for firms with high-impact, high-growth prospects and firms that displayed innovative energy in a stale financial market. "Catering is muted in two circumstances when rating agencies' reputational costs are higher than usual: (1) near the investment grade; and (2) when Fitch also provides a rating".

With reference to their second function of continual monitoring, credit rating agencies typically signal in advance their intention to consider rating changes, using 'outlooks' and rating reviews commonly referred to as 'watchlists'. The difference between the two is that outlooks represent the credit rating agencies' opinions on the development of a credit rating over the a period of eight to twelve months, whereas watchlists focus on a much shorter time horizon – three months, on average.

These monitoring functions potentially serve a dual purpose as, firstly, they may reflect a heightened demand for accurate and timeous credit risk information from financial markets, and secondly, they may be interpreted as an agency's means of engaging in an implicit contract with the borrowing entity. In a theoretical model, Bannier & Hirsch (2010) show that the watchlist procedure has fast become the institutionalized form of monitoring risky behaviour. The threat of imminent rating deterioration may induce companies to refrain from further risk-augmenting actions in order to uphold their initial rating level. They argue further that particularly for low-quality borrowers, the watchlist instrument seems to have developed into an active monitoring device allowing credit rating agencies to exert real pressure on the reviewed companies.

Having established their significance and functionality, it has been found that credit rating agencies frequently provide different ratings for the same entity. Alsakka & Gwilym (2012) show that rating discrepancies across agencies occur more frequent for sovereign ratings than for corporate ratings. The authors report that in their sample of sovereign ratings, Moody's and Standard and Poor's disagree on 50.6 percent of regular ratings, while Moody's and Fitch have different sovereign ratings in 46.9 percent of the observations. Standard and Poor's and Fitch have by far the lowest frequency of disagreement (35.9 percent). Three reasons have been identified to clarify the high level of rating discrepancy: (1) rating agencies utilise varying factors when conducting their assessments and assign different weightings to these factors; (2) the discrepancies seem

to arise around speculative-grade entities where data may not be sufficient for optimal assessment; and (3) some agencies may tend to favour issuers within their domiciled region.

With reference to the last point, Guttler & Wahrenburg (2007) prove that credit ratings by Moody's and Standard and Poor's are not subject to any home preference as they assigned more conservative ratings to issuers within the United States than foreign issuers. Their analysis is based on near-to-default issuers with multiple ratings by both credit rating agencies for the period 1997 to 2004. They attribute this to either better forecasting ability in the home market, or to the high quality national bankruptcy legislation.

2.4.10. Reliance on credit rating agencies

The subprime crisis has generated significant debate concerning economic theory and policy. Largely absent from this debate is an informed discussion of the methodology employed by economists in analysing the economy and formulating their proposals. But method matters. Lawson (2009) argues that current academic research practices need to be transformed before real insight can be achieved. He proposes a more grounded framework than that presupposed by current research practices facilitates a potentially more fruitful approach to understanding the crisis. The premise of the argument is shifting our focus to new academic theory rather than apply theory reflective of a past economic era to understand the underlying symptoms.

This motivation to evolve academic theory is shared by academia in several regions. The economic landscape has become highly advanced and evolved drastically and several theorists, whilst still relevant, have built their theories upon a vastly dissimilar business environment (Beck, Demerigue-Kunt, & Laeven, 2008). Size and influence of organisations have developed and continue to magnify, and the theory underlying market behaviour would need to evolve to align to current practice.

In the aftermath of the global financial crisis with governments having lost confidence in market fundamentalism and having realised the latent inadequacies of regulatory measures, a number of studies have been conducted to establish the proximate causes

of the financial crisis and to investigate whether shareholder wealth maximization played a role in triggering the crisis.

Joseph & Yahanpath (2011) conducted a case-study analysis around the potential triggers, collated several papers and conducted a number of surveys. Their aggregated data strongly supported the popular perception that unethical behaviour, rating agency inadequacy and time-lag issues were the primary causes of the crises. Secondary causes were highlighted as side effects of shareholder wealth maximisation objectives such as executive-level remuneration and compensation packages, creative accounting and risk shifting.

2.5. Conclusion

The preceding sections explained the role of reinsurers in the insurance industry and introduced the challenges they face in the emerging markets, particularly in Africa. The review continued with an overview of Africa and the potential growth and development predicted for the continent. Credit ratings and the international rating agencies that issue them were focussed upon to provide an in-depth understanding of their status and their perception within the financial services sector.

Global credit rating agencies are fallible when evaluating non-standard risks, with events such as Parmalat, AIG, the subprime crisis and the Asian crisis clearly evidencing this. Furthermore, their reaction to these events compounded the problems and could be considered to have materially worsened the ultimate impact. Significant empirical evidence exists that analysis performed by global rating agencies outside of their core competence can be flawed.

The structure of Africa and emerging markets is such that their characteristics are non-standard. The risk factors that exist within their environment varying significantly from those in the developed economies in which the global rating agencies are domiciled and geared toward.

The literature review provides sufficient evidence that the research question is important in ascertaining whether global credit rating agencies frameworks can be adapted to consider non-standard risk and questions their applicability to an African or

emerging market environment. The review importantly creates the context and establishes how rating of African-based reinsurers might be flawed and how this may negatively impact their ability to operate competitively in their domestic markets.

Chapter 3: Research Hypothesis

3.1. Introduction

This chapter introduces the hypothesis tested by introducing the purpose of the study and the motivation behind it. The hypothesis is defined thereafter.

3.2. Purpose of the Analysis

Historically, studies based on the differences between emerging and developed economies have been mainly focussed on the banking sector, stocks and bonds, and credit-rated investment instruments, neglecting the insurance industry. In instances where the insurance and reinsurance industries were assessed, the emphasis was on Brazil, Bermuda, the European Union and the Far East.

There has been a lack of focus upon the African financial landscape and the effects of global movements on the African market. Moreover, the insurance sector in Africa has developed into a highly technical, sophisticated and knowledgeable industry that is facing constrained growth due to the influence of credit ratings by commercial vendors. The nature of the industry as established in previous chapters is to utilise well-rated capacity as recommended by these agencies, thereby hindering the potential development and growth of the poorly-rated companies in Africa.

The purpose of this analysis is to determine whether the rating criteria used by the credit rating agencies is consistent for African-based reinsurers and non-African companies. It has already been established that discrepancies exist between the various rating agencies, so for the purpose of this study and to avoid confusion or misunderstanding, the Standard and Poor's data will be utilised.

3.3. Motivation for the Analysis

Of the 54 countries making up the African continent, credit rating agencies have only recognised 20 as international-level sovereigns and assessed their creditworthiness. Based on the research, these 20 countries in Africa are the only ones with an opportunity to compete in the global financial market. With common market practice geared

towards ratings of A- and above, the only country in Africa that meets global standard requirements is the Republic of Botswana. The table below lists the sovereign ratings issued by Standard and Poor's for the 20 countries (Standard and Poor's, 2015):

Table 2: Standard and Poor's Sovereign Ratings in Africa

Country	Local Currency Issuer Credit rating	Foreign Currency Issuer Credit Rating
Angola, Republic of	B+	B+
Botswana, Republic of	A-	A-
Burkina Faso	B-	B-
Cameroon, Republic of	B	B
Cape Verde, Republic of	B	B
Congo, Democratic Republic of	B-	B-
Congo, Republic of	B	B
Egypt, Arab Republic of	B-	B-
Ethiopia, Federal Democratic Republic of	B	B
Gabonese, Republic	B+	B+
Ghana, Republic of	B-	B-
Kenya, Republic of	B+	B+
Morocco, Kingdom of	BBB-	BBB-
Mozambique, Republic of	B-	B-
Nigeria, Federal Republic of	B+	B+
Rwanda, Republic of	B+	B+
Senegal, Republic of	B+	B+
South Africa, Republic of	BBB+	BBB+
Uganda, Republic of	B	B
Zambia, Republic of	B	B

Source: Standard and Poor's Rating Services Africa Ratings List

Published: 14th July 2015

In isolation from the rest of the African continent, there are 61 insurance-related companies registered with the South African Insurance Association (SAIA - Member Companies, 2015). Considering the number of other insurers and reinsurers established

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in the further 53 countries in Africa, there are only 15 entities, all South African, recognised by international credit rating agencies. Once again, this implies that these companies are the only ones in Africa with the opportunity to participate in the global insurance space. The table below lists the Standard and Poor's ratings for their subscribed insurance companies in Africa (Standard and Poor's, 2015):

Table 3: Standard and Poor's Issued Ratings in Africa

Insurance Company	Issuer Credit Rating	Financial Strength Rating
African Reinsurance Corporation	A-	A-
African Reinsurance Corporation (South Africa) Ltd.	A-	A-
AIG Life South Africa	BBB+	BBB+
AIG South Africa Ltd.	BBB+	BBB+
Allianz Global Corporate and Speciality SA Ltd.	BBB+	BBB+
Hannover Life Reassurance Africa Ltd.	BBB+	BBB+
Hannover Reinsurance Africa Ltd.	BBB+	BBB+
Lion of Africa Insurance Co. Ltd	BB	BB
Santam Ltd	BBB+	BBB+
Societe Centrale de Reassurance	BBB-	BBB-
Munich Reinsurance Co. of Africa Ltd.	-	AA-
SCOR Africa Ltd.	-	A+
General Reinsurance Africa Ltd.	-	AA+
Societe Centrale de Reassurance	BBB-	BBB-

Source: Standard and Poor's Rating Services Africa Ratings List

Published: 14th July 2015

All companies operating within a particular country are governed by that sovereign rating as a company may not maintain a rating higher than the sovereign rating of the country in which they are domiciled. Intuitively, the rationale behind this appears flawed as well-capitalised, financially stable companies experience downgrades by virtue of sovereign downgrades, and are likely to experience severe decline in investment as a

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result. To overcome this hurdle, companies with headquarters offshore have acquired financial guarantees from their overseas parent companies allowing them to rely on the parent balance sheet strength, and permitting the use of the parent credit rating. This is evidenced above by African Reinsurance Corporation, Munich Reinsurance Company of Africa, SCOR Africa Ltd. And General Reinsurance Africa Ltd.

3.4. Research Hypothesis

While a number of previous empirical studies have failed to identify the precise economic and financial elements that determine creditworthiness, the criteria that has been most prevalent is balance sheet strength. Given the data and theory thus far, the hypothesis tested is as follows:

i.   The criteria used to rate reinsurers in Africa is consistent with the criteria used for foreign reinsurers.

3.5. Conclusion

If the null hypothesis is true, a further consideration would be the impact of the 'rating cap' and the inability to achieve a rating higher than the sovereign rating.

If the null hypothesis is false, a rating may be a significant contributor to hindering the growth and competitiveness of African companies. In this instance further consideration must be given to the hypothesis presented in Chapter 2, that the non-standard risk of emerging markets cannot be fully assessed in the rating methodology of the global rating agencies and their models are negatively skewed against them.

Chapter 4: Research Methodology

4.1. Introduction

The following section describes the research design followed to achieve the research objectives. It further discusses the unit of analysis, sampling method and sample size as well as elements relating to the collected data. Limitations of the research are identified at the end of the section.

The research process, in general, can be described as follows (Babin, Carr, Griffin, & Zikmund, 2012):

- problem discovery
- selection of a research technique form the following options:
    - exploratory research
    - descriptive research
    - causal research
- formulation of the research question
- selection of the basic research method
- collection of data
- data processing and analysis
- interpretation of findings; and
- writing a report

4.2. Research Design

Using the model, the section below outlines and describes the elements that are pertinent to the design of the research methodology.

4.2.1. Problem Discovery

The insurance and reinsurance industry is highly geared towards international credit ratings with global market practice prescribing the utilization of security with an A-rating or better. As companies are not able to attain a rating higher than the sovereign rating of the country in which it is domiciled, this paper aims to determine whether

companies in Africa and other emerging markets are jeopardized by these poor credit ratings.

4.2.2. Selection of Research Technique

The initial research and literature review has shown undoubtedly that credit ratings and rating fluctuations have a profound impact on investor confidence and hence a company's competitiveness. Assessing the creditworthiness of a reinsurer essentially means evaluating their ability and willingness to honour its debt obligations to the insurer. As the determinants may be qualitative and quantitative in nature, an exact measure of creditworthiness is impossible to structure.

Based on structural models of debt, default is triggered when the market value of the firm's assets falls below a certain solvency level (Davydenko, 2012). The elusive nature of credit rating criteria has led to the development of several independent models built by analysts and statisticians to establish a systematic relationship between variables and ratings. A number of models have been identified that attempt to predict credit default timing by assessing solvency ratios and endogenous movements in the balance sheet. Understanding that in a reinsurer environment where contingent capital is issued, the ability to convert equity into asset value quickly should the need arise becomes an integral consideration. In the absence of a universally accepted model to quantify this valuation, Brigo, Buescu, & Morini (2012) investigate a number of valuation formulae and investigate the symptoms of first instance default exhibited by companies. These are centred on liquidity and often linked to share-price fluctuations.

Bodoff (2011) highlights the options a company has in evaluating the reinsurer counterparty risk. He proposes the company could choose to evaluate reinsurance credit risk using expert analysis to determine a non-market-based appraisal value for reinsurance credit risk; compare its appraisal of the price of risk versus the market's price of risk; or determine whether or not it has an edge over the market in estimating reinsurance credit risk.

In classifying particular features that attract investment into a corporation, it was found that qualitative attributes were most influential and concurrently most problematic to measure, however the commercial strength of an issuer was established as the

formative element in decision-making (Gatumel & Lemonye de Forges, 2013). The commonality running through the theory was the power of solvency and balance sheet strength in evaluating a company's creditworthiness.

A quantitative of financial analysis is aimed at understanding behaviour using complex mathematical and statistical modelling. By assigning a numerical value to variables, quantitative analysis attempts to model reality in mathematical terms (Babin, Carr, Griffin, & Zikmund, 2012). To this end a quantitative analysis was chosen for this analysis as the solvency ratios act as independent variables and the credit ratings were converted into a numerical scale that served as the dependent variable.

4.2.3. Formulation of the Research Question

While a number of previous empirical studies have failed to identify the precise economic and financial elements that determine creditworthiness, the criteria that has been most prevalent is balance sheet strength. Given the data and theory thus far, the hypothesis tested is as follows:

i.   The criteria used to rate reinsurers in Africa is consistent with the criteria used for foreign reinsurers.

4.2.4. Selection of the Basic Research Method

In quantifying the strength and stability of a company's balance sheet, the most applicable descriptors are solvency ratios. Regardless of the monetary amounts, solvency ratios aptly summarise the financial data into comparable, concise values, useful for the analysis. As solvency was identified as a key indicator of financial soundness, the analysis was built around four significant variables: (1) value of assets; (2) value of liabilities; (3) shareholders equity; and (4) value of reserves. The following ratios were calculated for each company:

1.   Value of reserves to Assets
2.   Value of reserves to Liabilities
3.   Value of reserves to Shareholders Equity

A statistical model was then built to conduct a regression analysis on the variables. A regression analysis is a statistical process for estimating the relationships between

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variables. Regression analysis helps one understand how the value of the dependent variable, sometimes referred to as the criterion, is affected by changes in the values of the independent variables, also called predictors.

A simple two sided t-test was conducted at the 95 percent confidence level to determine whether there was a difference in the means of the two samples, namely the African reinsurers and the non-African reinsurers. A t-test is a statistical hypothesis test used to determine whether two sets of data are significantly different from each other. The test was conducted as a two-sided test as there was no certainty as to which mean result would be higher than the other. The confidence level refers to the percentage of all observations expected to be included in the sample.

The objective of running the statistics in this manner was to test whether there was a significant difference in the data collected from the two samples which would assist in drawing conclusions around the quality of the balance sheet and subsequent creditworthiness of the samples.

4.2.5. Collection of Data

4.2.5.1. Population

In order to focus on the research problem effectively, the population chosen was global reinsurance companies. As this study aimed to compare two very specific sample groups, these reinsurance companies had to be further split into those businesses domiciled in Africa, and those established off the continent.

4.2.5.2. Limitations to the population

The first limitation faced was that reinsurers with Standard and Poor's ratings in Africa were all domiciled in South Africa, the majority of which were conducting business on the back of their financial guarantees from an offshore parent company. Firstly, by using solely South African companies, the sample would not be a true representation of the African continent and secondly, the credit ratings utilised were reflective of the parent companies' creditworthiness assessments and not the South African entities'.

Financial institutions in Africa, due to the lack of scope internationally, have opted to employ the regional credit rating agency, Global Credit Rating Company, to issue local

ratings. The Global Credit Rating Company was established in 1996 as the African Arm of the New York Stock Exchange-listed Duff & Phelps. Following rapid growth, the company was soon recognised as the African market leader, accounting for the majority of all ratings accorded on the continent. Global Credit Rating's African headquarters are based in Johannesburg, with its SADC, West, and East African regional offices established in Harare, Lagos and Nairobi respectively (Global Credit rating Company, 2015).

With a comparatively larger client base in Africa, the Global Credit Rating Company's database provided the population of African-based reinsurers.

4.2.5.3. Sampling Method and Size

As a result of the above limitation, probability sampling was not possible, therefore in order to make a logical generalisation about the population, non-probability sampling was used. Non-probability sampling can be conducted in a variety of ways including quota, purposive or judgement, snowball, or self-selection sampling (Saunders, Lewis, Saunders, & Thornhill, 2011). Judgement sampling was chosen for this analysis due to the limited number of viable candidates identified for the study.

The sample of African-based reinsurers was selected from the Global Credit Rating Company's database. The sample was not random as firms who operated off their parent / holding company's balance sheet were excluded in order to extract consistent and correct financial data. Firms whose financial statements and annual reports were not accessible were also excluded from the study. The final sample consisted of ten African-based reinsurers, all with Global Credit Ratings and firm-specific financial data.

The sample of non-African reinsurers was selected from the Thomson-Reuters database and was comprised of 14 enterprises, independent of parent / holding company with Standard and Poor's credit ratings. Similarly, the sample was not random as the companies used for this analysis has to fulfil specific criteria, and their financial data had to be accessible through the Thomson Reuters database.

4.2.6. Data Processing and Analysis

4.2.6.1. Validity and Reliability of data

Validity considers whether the findings are really about what they appear to be. It refers to the extent to which data collection methods accurately measure what they intended to and that the research findings are really about what they profess to be (Saunders, Lewis, Saunders, & Thornhill, 2011). Validity is therefore important in the design and execution of research.

Reliability refers in essence to the ability to repeat the measurement to produce consistent findings over time (Polonsky & Waller, 2014). It is the degree to which the results could be replicated on different occasions or when used by other researchers. As the data used for the study is open-source and consistent, the reliability of data is high.

Primary data involves the collection of data for the main objective of generating the results of a research project (Saunders, Lewis et al., 2003, p 84), whereas data collected for an alternative purpose is classified as secondary data.

Primary data can be qualitative or quantitative in nature. Information that can be used to qualify data and is derived from numerical values underpins the essence of quantitative research. Quantitative research includes surveys, observation and experimentation and generates attributional and opinion-driven data (Maylor & Blackmon, 2005). Moreover, qualitative data is utilised when the strength of the responses in the relation to the sample cannot be quantified.

For the purpose of this study, statistical analysis was performed on financial information, therefore quantitative data was used. Quantitative research enquires 'what' will be researched (Polonsky & Waller, 2014) aligning with the objective of determining whether the criteria used to judge creditworthiness is consistent.

Secondary data is beneficial as it aids in reducing data collection time, as the data is already publically available, and may provide contextual background. The study relied of publically available, published financial statements to extract the relevant data, therefore secondary data was utilised.

4.2.6.2. Data Analysis

The three stages of data analysis are categorised as (1) the capturing of data; (2) descriptive statistics; and (3) analysis to test the hypotheses (Tharenou, Donohue, & Cooper, 2007). The statistics and analysis are discussed in the next chapter.

As the data was extracted from the relevant databases, and the corresponding credit ratings captured accordingly, this was checked for accuracy and the relevant solvency ratios were calculated. The credit ratings were converted to a nominal scale using the following table:

Table 4: Credit Rating conversion scale

Rating	Value
AAA	1
AA+	2
AA	3
AA-	4
A+	5
A	6
A-	7
BBB+	8
BBB	9
BBB-	10
BB+	11
BB	12
BB-	13
B+	14
B	15
B-	16

4.2.7. Interpretation of Findings

The results of the analysis are tabulated in Chapter 5, followed with a discussion around the interpretation and implication of these results in Chapter 6.

4.3. Research Limitations

There were several limitations to the analysis given the complexity of the constituents that contribute to the overall creditworthiness of a company, the first of which is regulatory and legislative environment. The regulatory framework governing financial institutions differs from country to country and has a direct impact on the amount of capital employed, debt to equity ratios and general solvency guidelines the companies adhere to.

Exchange rate fluctuation affects the financial information of companies conducting business on various countries. Although it is common practice for most African countries to trade in US dollars, there are exceptions, and companies are then faced with exchange rate issues. It was also realised that the African based reinsurers' financial statements were expressed in local currency, so for the purpose of the study, all monetary amounts were converted to US dollars at the published spot-rates on a specific day.

Varying reporting regulation in each of the countries translated into different naming conventions and levels of disclosure, further inhibiting the scope of the study. For consistency and impartial evaluation, all the companies' financial data was extracted from their 2013 financial year-end reports.

As the study was based on publically available data, there was no insight as to the companies' strategies going forward and is a pure snapshot of their financial positions at a point in time. For the same reason, there are no qualitative variables taken into account, making this a purely qualitative, statistical analysis.

For consistency, all African-based reinsurers were analysed based on their Global Credit Rating Company ratings and all non-African reinsurers their Standard and Poor ratings.

4.4. Conclusion

This chapter provided the framework for the research methodology used to interrogate the research hypothesis stated in chapter 3. It described the process followed in order to obtain the sample for the statistical analysis and concluded with identifying the limitations to the study.

Chapter 5: Results

5.1. Introduction

Chapter 5 presents the delineated results from the analysis. It begins with a breakdown and perceptive analysis of the data extracted for the study, highlighting themes and arguments pertinent in the context of the research question. It follows with the results from the statistical regression analysis.

5.2. Descriptive Results extracted from the data

Table 5: Value of Reserve

NAME OF ENTITY	COUNTRY OF DOMICILE	USD Reserves
Ghana Reinsurance Company	Ghana	15 656 169
East Africa Reinsurance Company	Kenya	10 048
Kenya Reinsurance Company	Kenya	36 480
MOZRE Mozambique Resseguros	Mozambique	1 189 696
Namibia National Reinsurance Company	Namibia	3 037 393
Tanzania National Reinsurance Corporation	Tanzania	4 899 342
Grand Reinsurance Company	Zimbabwe	2 331 828
Continental Re	Nigeria	49 614 970
Africa RE	South Africa	79 268 364
ZB Reinsurance Limited	Zimbabwe	56 295 273
ACE Reinsurance (Switzerland) Ltd	Switzerland	50 628 000 000
Allianz SE	Germany	760 145 000 000
Central Reinsurance Corp.	Taiwan	624 000 000
Endurance Reinsurance Corp. of America	United States	4 090 000 000
Euler Hermes Reinsurance AG	Switzerland	2 060 000 000
Everest Reinsurance Co.	United States	11 741 000 000
Hannover Reinsurance	Germany	52 749 000 000

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Korean Reinsurance Co.	Korea	2 341 000 000
Mapfre Re, Compania de Reaseguros, S.A.	Spain	50 732 000 000
Munich Reinsurance Co.	Germany	226 431 000 000
QBE Reinsurance Corp.	United Kingdom	22 485 000 000
RGA Americas Reinsurance Company, Ltd.	United States	18 607 000 000
Swiss Reinsurance Co. Ltd.	Switzerland	127 812 000 000
Taiping Reinsurance Co. Ltd.	Hong Kong	33 567 000 000

The first 10 entries in the table are the African-based reinsurers and the following 14 are global non-African reinsurers. The values of the reserves tabulated are in US dollars.

The average reserve for her African reinsurers is approximately 21 million US dollars, whilst the corresponding figure for the non-African reinsurers is 97 billion US dollars, which is over 4 500 times the African average. This may be perceived as an indication that regional reinsurers are not competing in the global arena.

For the 2014 financial year, the global reinsurance premiums written totalled 191.5 billion US dollars, with African reinsurers written premium approximately 1.5 billion US dollars, broken down as follows (Standard and Poor's, Global Reinsurance Highlights - 2015 Edition, 2015):

Table 6: Reinsurance Premium Income 2014 for African Countries

Country	2014 Written Premium (USD)
Ghana	29 000 000
Kenya	105 900 000
Nigeria	434 000 000
Sierra Leone	22 500 000
South Africa	898 300 000

Source: Standard and Poor's Global Reinsurance Highlights 2015 Edition

The data suggests that only 0.8 percent of the reinsurance premium written worldwide is captured on the African continent, again highlighting the vast difference in the capacities reinsurers are able to offer the insurance markets.

A report on the global insurance market released by Swiss Re states that total insurance premiums in the primary market totalled approximately 2 655 billion US dollars, with 46 billion US dollars emanating from the African primary market during the 2014 financial year (Swiss Re, 2015).

To contextualise the issue faced by African reinsurers: the global spend on insurance is 2 655 billion US dollars, of which 191.5 billion dollars is utilised to purchase reinsurance capacity. Whilst all risks are not reinsured and the greater proportion of this premium is captured by the primary market, the reinsurance premium equates to 7.21 percent of the global primary insurance market premium. There is a total of 46 billion US dollars in insurance premiums being generated in the African market with a mere 1.5 billion US dollars retained on the continent as reinsurance premiums, which is 3.26 percent of the primary market insurance spend. Applying the global average of 7.21 percent, the approximate reinsurance premium captured in Africa should be 3.3 billion US dollars, intimating that more than half of the reinsurance capacity required by African insurers is imported from global offshore markets.

The table below ranks the top 10 countries for average overall corporate governance.

Table 7: Corporate Governance Ratings by Country

Rank	Country	No of Companies	Average Overall Rating
1	United Kingdom	394	7.60
2	Canada	132	7.36
3	Ireland	19	7.21
4	United States	1761	7.16
5	New Zealand	10	6.70
6	Australia	194	6.65
7	Netherlands	30	6.45
8	Finland	28	6.38
9	South Africa	43	6.09
10	Sweden	40	5.88

South Africa features as the ninth country in the world when ranked by corporate governance levels, bearing testament to the sophistication of the South African corporate, financial landscape. With corporate governance failure identified as one of the key symptoms of economic decline (Claessens & Yurtoglu, 2013), this data suggests South Africa is exhibiting indicators of economic failure.

The table below, constructed from the financial data extracted for the research, tabulates the assets and liabilities values of each company, as well as their corresponding solvency ratio. Having already covered the aspects around the size of the companies in Africa versus the global non-African companies, the focus for this section is solely on the solvency ratios. Please note for the purposes of this study, the liabilities exclude the value of reserves. The reserves were excluded as they vary per company for the various reasons explained in the previous section, and the solvency ratios below purely indicate the reinsurer's liability to asset ratio, excluding insurance-related debt obligations.

Table 8: Solvency Ratio per Company

Name of Entity	USD Assets	USD Liabilities	Solvency Ratio
Ghana Reinsurance Company	65 563 523	42 538 934	65%
East Africa Reinsurance Company	39 569	14 484	37%
Kenya Reinsurance Company	225 721	43 167	19%
MOZRE Mozambique Resseguros	5 447 307	2 791 569	51%
Namibia National Reinsurance Company	13 492 308	8 973 433	67%
Tanzania National Reinsurance Corporation	319 606 035	301 859 215	94%
Grand Reinsurance Company	13 408 885	1 462 417	11%
Continental Re	1 312 690 503	1 191 289 136	91%
Africa RE	216 610 909	131 502 545	61%
ZB Reinsurance Limited	255 731 818	55 849 760	22%
ACE Reinsurance (Switzerland) Ltd	97 953 000 000	19 589 000 000	20%
Allianz SE	954 296 000 000	137 177 000 000	14%
Central Reinsurance Corp.	950 000 000	31 900 000	3%
Endurance Reinsurance Corp. of America	8 584 000 000	1 395 000 000	16%
Euler Hermes Reinsurance AG	6 252 000 000	1 190 000 000	19%
Everest Reinsurance Co.	20 817 000 000	1 625 000 000	8%
Hannover Reinsurance	69 959 000 000	9 494 000 000	14%
Korean Reinsurance Co.	6 033 000 000	2 271 000 000	38%
Mapfre Re, Compania de Reaseguros, S.A.	74 831 000 000	14 102 000 000	19%

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Munich Reinsurance Co.	310 533 000 000	47 779 000 000	15%
QBE Reinsurance Corp.	38 893 000 000	5 378 000 000	14%
RGA Americas Reinsurance Company, Ltd.	44 679 000 000	20 674 000 000	46%
Swiss Reinsurance Co. Ltd.	191 393 000 000	33 066 000 000	17%
Taiping Reinsurance Co. Ltd.	51 841 000 000	14 048 000 000	27%

The International Association of the Insurance Surveillance Institutions (IAIS) defines the solvency margin as a representation of the positive difference between assets and liabilities, under the conditions determined in accordance with their country-specific standards and evaluations. This difference should always exceed the level determined by the standards regarding the minimum limit of the solvency margin (International Association of the Insurance Surveillance Institutions, 2014).

The average solvency ratio for the African-based reinsurers is 52% with the lowest being 11% and the highest 94%. The average for the non-African reinsurers is 19% with the lowest being 3% and the highest 38%. These results could imply that perhaps the ratings accorded to reinsurers by the credit rating agencies are in fact are justified. However, a valid point to note is the African reinsurers were all assessed based on their ratings from the Global Credit Ratings Company, and the offshore reinsurers on their Standard and Poor's ratings.

5.3. Results from the regression analysis

The financial data extracted for this study was focussed entirely on the calculating and analysing the solvency of the companies. The data was extracted from the 2013 audited balance sheet of each company and the summary statistics of each sample are tabulated below.

Table 9: Descriptive Statistics – Sample 1: Non-African

```
-> Origin = Non-African

    Variable |     Obs        Mean    Std. Dev.       Min         Max
-------------+--------------------------------------------------------
 USDReserves |      14    97429.43     200498.4        624      760145
   USDAssets |      14    134072.4     250991.2        950      954296
USDLiabili~s |      14    21987.14     35909.31       31.9      137177
    SHEquity |      14    14655.86     16786.21      294.1       56974
    R2Assets |      14    .5856616    .1435944   .3294946    .7965505
-------------+--------------------------------------------------------
      R2Liab |      14    4.702461     4.645186   .9000193    19.56113
    R2Equity |      14    4.162864     3.493506   .6862092    13.34196
```

For the Non-African reinsurers, the average value of reserves was 97 billion US dollars, with the lowest value being 624 million US dollars, and the highest 760 billion US dollars. The average value of assets was 134 billion, with the lowest and highest being 950 million and 954 billion respectively. The average liabilities value was approximately 22 billion dollars ranging between 31.9 million and 137 billion US dollars. Finally the average shareholders' equity was 14.6 billion dollars, with the smallest being 294 million dollars and the largest 56 billion.

Table 10: Descriptive Statistics – Sample 2: African

```
-> Origin = African

    Variable |     Obs        Mean    Std. Dev.       Min         Max
-------------+--------------------------------------------------------
 USDReserves |      10    21.23396     29.23215   .0100484    79.26836
   USDAssets |      10    220.2817     402.3643   .0395686    1312.691
USDLiabili~s |      10    173.6325     369.8526    .014484    1191.289
    SHEquity |      10    25.41524     46.73967   .0150363    143.5868
    R2Assets |      10    .1910987    .1027967   .0153293    .3659482
-------------+--------------------------------------------------------
      R2Liab |      10    .5934706     .4747955   .0162306    1.594503
    R2Equity |      10    2.118495     4.083529   .2425289    13.57335
```

For the African reinsurer sample, the average value of reserves was 21 million US dollars, with the lowest value being 10 000 US dollars, and the highest 79 million US dollars. The average value of assets was 220 million, with the lowest and highest being 39 000 and 1.3 billion respectively. The average liabilities value was approximately 173 million dollars ranging between 14 500 and 1.191 billion US dollars. Finally the average

shareholders' equity was 25 billion dollars, with the smallest being 15 000 dollars and the largest 143 million.

To ascertain the impact of changes in the variables on the reserve fund held by the companies, the correlations tested were as follows:

- Assets to reserves
- Liabilities to reserves
- Shareholders equity to reserves

The correlations were all found to be positive intimating that the movements in the reserve fund are move in the same direction as movements in the other variables.

The chart below plots the reserves to assets ratios for the individual companies and fits the appropriate curve to the data. The pattern formed by the scatterplots indicate low correlation for African companies (0.19), whereas the non-African companies display a relatively higher level of correlation (0.58), indicating a relationship between the level of capital held and the level of reserves.

Figure 2: Correlation Chart: Reserves to Assets
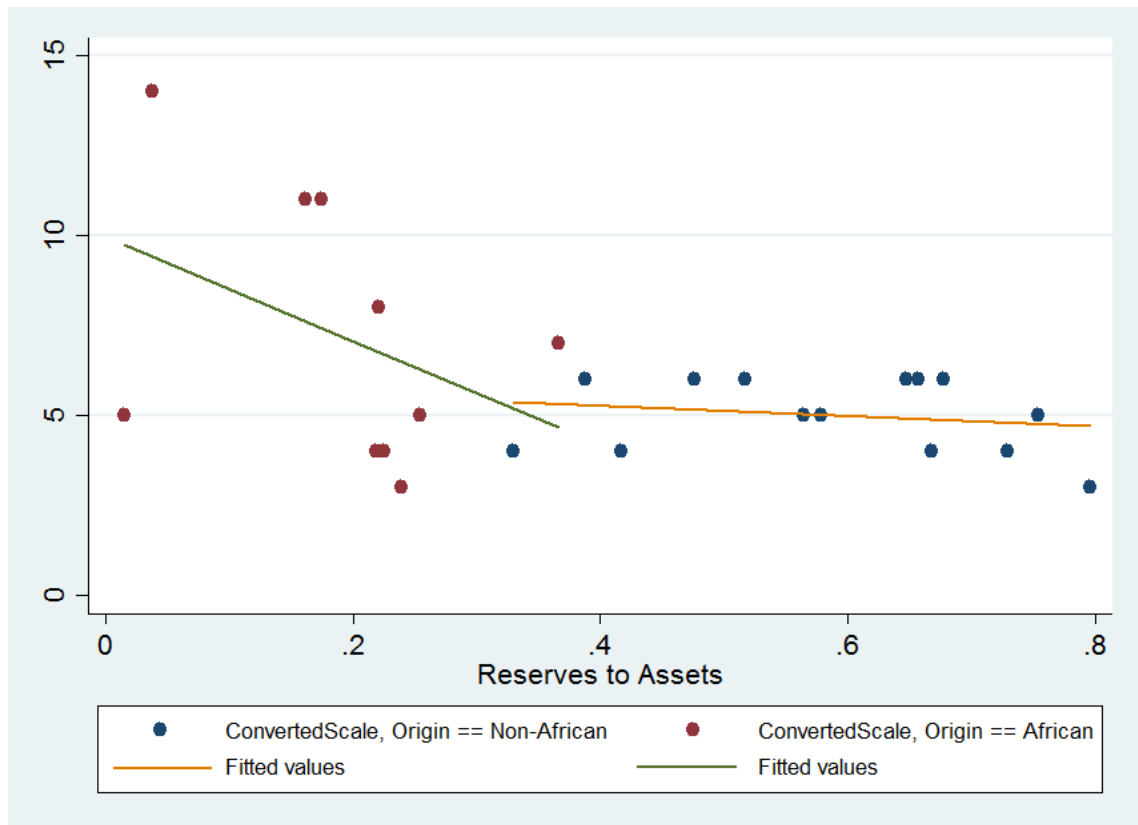
The following chart plots the ratios of reserves to liabilities in order to ascertain if there exists a relationship between the two variables. There is a more significant difference between the two samples in this instance as the non-African companies have an average correlation factor of 4.7, with the African sample displaying an average correlation coefficient of 0.59.

Figure 3: Correlation Chart: Reserves to Liabilities

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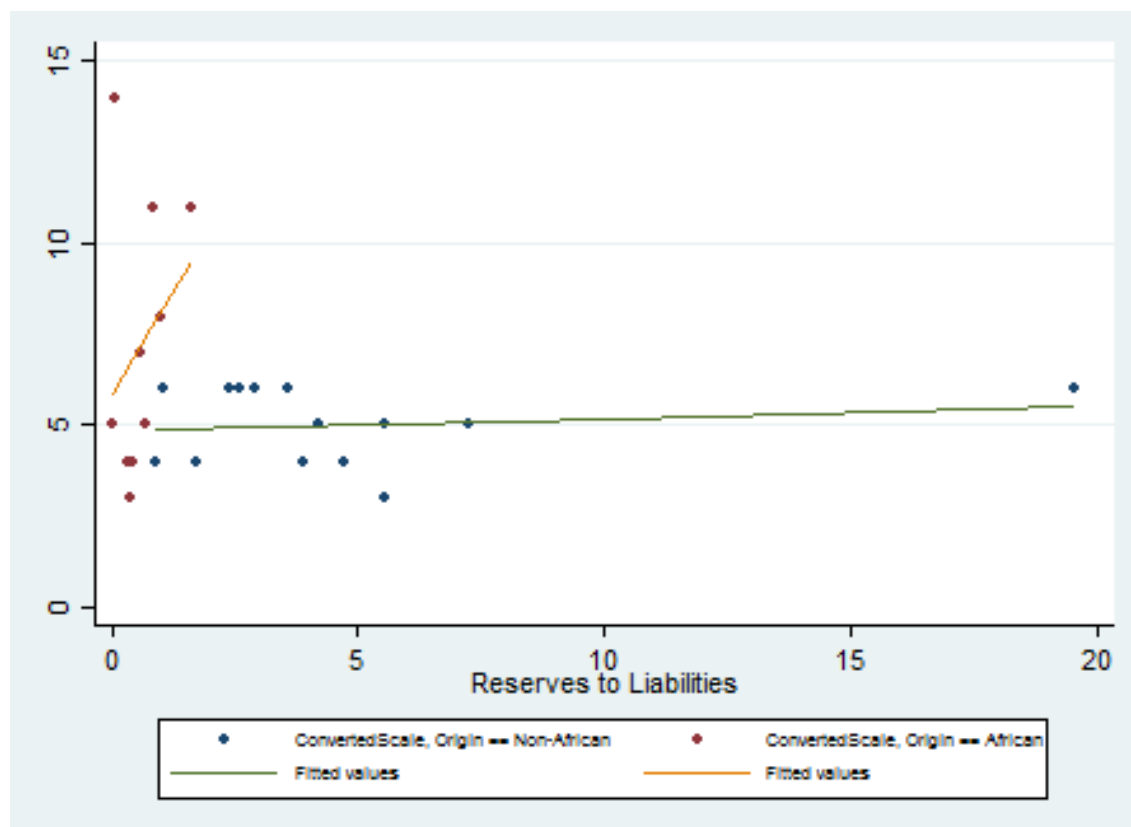
The last correlation chart similarly plots the ratio of reserves to shareholders equity. In this instance the average correlation coefficient for African companies is 2.11 with the corresponding figure for the non-African companies approximately double at 4.16

Figure 4: Correlation Chart: Reserves to Shareholders Equity
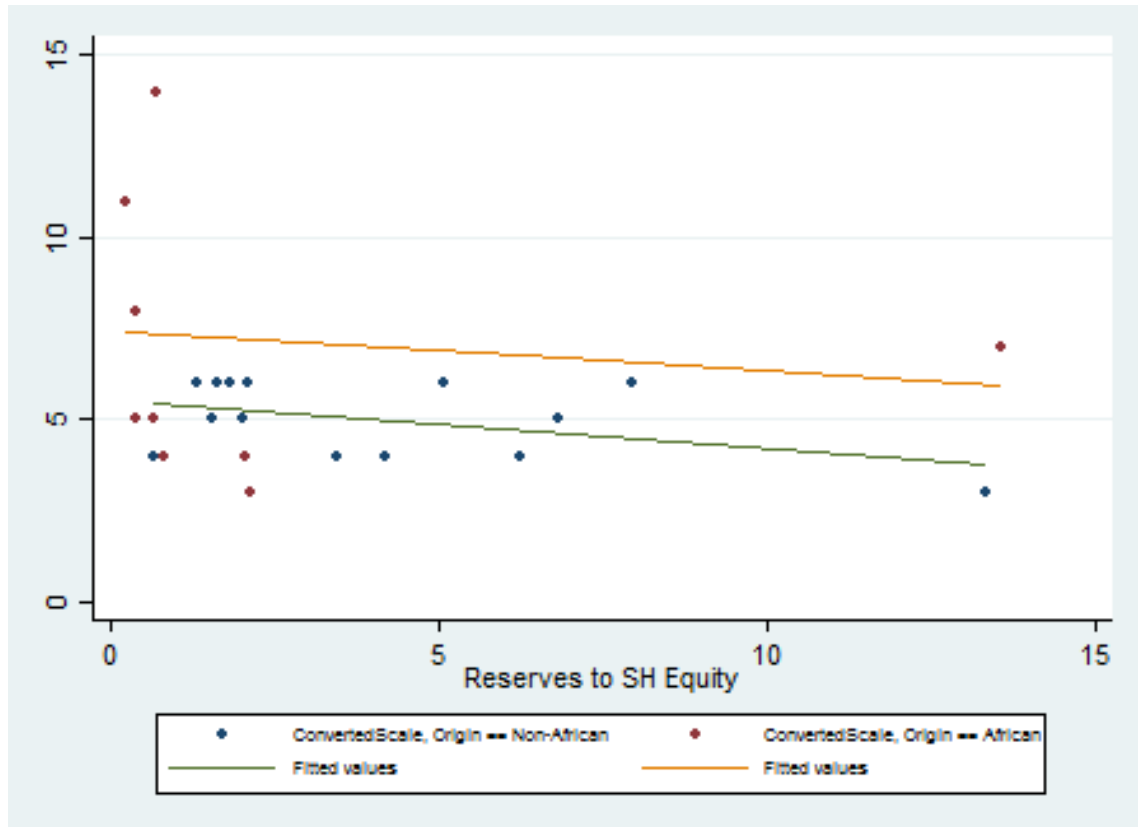
Table 11: Results of Regression Analysis – Sample 1: Non-African

```
-> Origin = Non-African

      Source |       SS       df       MS              Number of obs =      14
-------------+------------------------------           F(  3,     10) =    1.14
       Model |  3.57237394     3  1.19079131           Prob > F      =  0.3789
    Residual |  10.4276261    10  1.04276261           R-squared     =  0.2552
-------------+------------------------------           Adj R-squared =  0.0317
       Total |          14    13  1.07692308           Root MSE      =  1.0212


------------------------------------------------------------------------------
 ConvertedS~e |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    R2Assets |   2.384118   3.853219     0.62   0.550    -6.201389    10.96962
      R2Liab |    .002842   .0784032     0.04   0.972    -.1718512    .1775352
    R2Equity |  -.2080187    .145016    -1.43   0.182    -.5311344    .1150971
       _cons |   4.456303   1.611646     2.77   0.020     .8653312    8.047274
------------------------------------------------------------------------------
```

Table 12: Results of Regression Analysis – Sample 2: African

```
-> Origin = African

      Source |       SS       df       MS              Number of obs =      10
-------------+------------------------------           F(  3,     6) =    2.49
       Model | 68.5764638        3  22.8588213          Prob > F      =  0.1572
    Residual | 55.0235362        6  9.17058937          R-squared     =  0.5548
-------------+------------------------------           Adj R-squared =  0.3322
       Total |      123.6        9  13.7333333          Root MSE      =  3.0283


  ConvertedS~e |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
---------------+----------------------------------------------------------------
      R2Assets |  -37.37188     15.0567    -2.48   0.048    -74.21431   -.5294525
        R2Liab |   5.493918    2.496916     2.20   0.070    -.6158155    11.60365
      R2Equity |   .5378147     .354539     1.52   0.180    -.3297109     1.40534
         _cons |   9.941882    2.308013     4.31   0.005     4.294377    15.58939
```

In order to understand the effect of these ratios on the credit rating of the company, a regression analysis was conducted at a 95 percent confidence level. The results of these tests are tabulated in tables 6 and 7 above.

In this study R-squared measures how much variability in the credit rating is accounted for by the solvency ratios on the reinsurance companies. The adjusted R-squared indicates how smoothly the model has integrated the results and ideally the value should be close to that of the R-squared. The differences between the two values, as shown in the results above signify that the results of the entire population are likely to differ significantly from the results of the sample. It can be concluded that the cross-validity of the model is poor.

For the African reinsurers, the solvency ratios explain only 33 percent of the variance in credit rating, whilst the solvency accounts for only 3 percent of the variance in the credit ratings of offshore reinsurers.

5.4. Conclusion

The chapter presented the results of the analysis and provided substantial descriptive results from the data consolidated for the study. However the statistical regression has produced results that cannot be deemed significant at the level of confidence tested. The result of the analysis are therefore inconclusive as a test of the research hypothesis proposed in Chapter 3.

Chapter 6: Discussion of Results

6.1. Introduction

This chapter is aimed at integrating the results of the analysis with the theory and literature previously discussed. As the regression analysis generated inconclusive results, the sections that follow serve to analyse the underlying financial data extracted for the study in conjunction with the literature to fully understand the similarities and differences between the financial landscapes of developed and developing markets.

6.2. Reinsurance

The role and significance of reinsurance has been established through the previous chapters. Short-term insurers require optimal reinsurance arrangements to maximise the probability of their financial and operational sustainability *(Balbàs, Balbàs, & Heras, 2009)*. Reinsurance can also be utilised as a stabilising mechanism for insurers with new or small portfolios and a very slight capital base. In this instance the capacity provided by the reinsurer provides the young business with a platform from which to develop *(Bernard & Tian, 2009)*

Reinsurers provide protection against large, catastrophic events such as earthquakes, hurricanes and flooding, as well as protection from the accumulation of smaller losses to the portfolio, thereby reducing volatility in the insurer's portfolio *(Guan & Liang, 2014)*. The sensitivity analysis conducted by Guan and Liang concluded that reinsurance utilisation should be maximised as long as the net cost of reinsurance is lower than the cost of capital.

In essence, the insurer cedes a share of the risk it underwrites to the reinsurer, together with the corresponding portion of the premium. The reinsurer is then contractually liable for that percentage of the loss, should it occur, meaning that the liability or debt obligation sits on the reinsurer balance sheet *(Garvin, Grace, & Hilliard, 2014)*.

While reinsurance purchasing may increase the cost to an insurer, it significantly reduces the balance sheet volatility. Effectively this translates into reinsurers bearing the debt obligation of the insurance company and the reinsurer balance sheet stability supporting

the insurer's financial position. The exposure of an insurance company to reinsurer failure or counterparty credit risk is difficult to quantify due to a lack of reliable measurement criteria *(Gregory, 2012)*.

Current practice in the property-casualty insurance industry for buying reinsurance and for managing reinsurance credit risk is complex, multifaceted, and varies across individual companies. As a result, any broad summary of current practice is bound to be subject to caveats, limitations, and exceptions. Cummins, Weiss, & Zhijian (2012) state that in addition to evaluating reinsurers based on general creditworthiness, companies also typically monitor their accumulated amount of credit risk exposure to any individual approved reinsurer. This means that a property and casualty insurance company may, through its various reinsurance arrangements, accumulate a significant amount of exposure with one particular reinsurer. This exposure may encroach upon a previously defined risk limit set by the company. As a result, the company may choose to de-risk and halt further transaction with the reinsurer, even if the reinsurer would otherwise be creditworthy. *(Garvin, Grace, & Hilliard, 2014)*

A reinsurer reserve is a fund required by the statute of an insurance company for the protection of its policyholders. The fund is applied in the event of insolvency or dissolution of the reinsurance company, or for the return of unearned premiums for a cancelled policy. The proportion of premiums held in the reserve fund is determined by a combination of factors, of which regulatory regime has the most influence *(Cummins & Weiss, 2000)*. Regulatory frameworks account for the regional traits that endemic to their markets and legislate accordingly. These subtleties will not be easily detected just looking at the sizes of the reserves.

Another pertinent factor influencing the reserve is the reinsurance company's individual risk appetite and level of conservatism as the proportion of premium reserved for the possibility of loss or cancellation is subject to the company strategy and perception of the market. This perception is hugely guided by past experience, trends in the market and personal loss experience, and therefore can vary substantially from one reinsurer to another.

Understanding there could be a number of underlying factors influencing the variability of the reserves, it provides us with an approximate indication of the volume of business being generated by the individual reinsurer. The financial data extracted for this study included the value of reserves published in the 2013 audited balance sheet of each company.

The average reserve for the African reinsurers is approximately 21 million US dollars, whilst the corresponding figure for the non-African reinsurers is 97 billion US dollars, which is over 4 500 times the African average. This is indicative of the fact that regional reinsurers are not competing in the global arena.

For the 2014 financial year, the global reinsurance premiums written totalled 191.5 billion US dollars, with African reinsurers written premium approximately 1.5 billion US dollars *(Standard and Poor's, Global Reinsurance Highlights - 2015 Edition, 2015)*. The data suggests that only 0.8 percent of the reinsurance premium written worldwide is captured on the African continent, again highlighting the vast difference in the capacities reinsurers are able to offer the insurance markets.

A report on the global insurance market released by Swiss Re states that total insurance premiums in the primary market totalled approximately 2 655 billion US dollars, with 46 billion US dollars emanating from the African primary market during the 2014 financial year *(Swiss Re, 2015)*.

To contextualise the issue faced by African reinsurers: the global spend on insurance is 2 655 billion US dollars, of which 191.5 billion dollars is utilised to purchase reinsurance capacity. Whilst all risks are not reinsured and the greater proportion of this premium is captured by the primary market, the reinsurance premium equates to 7.21 percent of the global primary insurance market premium. There is a total of 46 billion US dollars in insurance premiums being generated in the African market with a mere 1.5 billion US dollars retained on the continent as reinsurance premiums, which is 3.26 percent of the primary market insurance spend. Applying the global average of 7.21 percent, the approximate reinsurance premium captured in Africa should be 3.3 billion US dollars, intimating that more than half of the reinsurance capacity required by African insurers is imported from global offshore markets.

The primary driver behind this is the poor credit ratings accorded to these African reinsurers. The dependence on foreign reinsurers was created historically due to the lack of expertise in local markets, leading to a reliance on these markets to provide both capacity and knowledge to the emerging insurance economy *(Garvin, Grace, & Hilliard, 2014)*. As the developed market reinsurer was viewed as a knowledgeable partner, the adverse selection process began, driving the placement of the business into the developed market.

This trend has continued as this capacity is always available to the emerging market. With South Africa viewed the pioneer in technological and financial advancement in Africa *(Aron & Meullbauer, 2013)*, it has been privileged to have gained access to the highly rated security in the global market. Insurers in South Africa have been conditioned to believe that the global standard rating requirement of A- or better is applicable to them, justifying their decision to purchase off-shore reinsurance capacity *(Du Plessis, Mostert, & Mostert, 2010)*.

With insurance being a significant determinant in the growth and development of an economy *(Outreville, 2013)* and the demand for insurance and subsequently reinsurance capacity increasing with a rising per capita income, Africa as an emerging market could experience a noteworthy boom in the insurance industry. Reinsurers in Africa would have to be aligned to the needs of their clients in order to reap the benefits of this economic advancement as the alternative is the transfer of this benefit into the global market.

Historically, the highly volatile classes of business such as motor insurance and third-party liability dominated the emerging market *(Hong & Yan, 2015)*. However, with the advancement and evolution of financial systems in these markets, the portfolio of insurance required will diversify, and become more profitable over time. This sophistication of the financial sector in Africa will enable the primary insurance market to flourish into a highly profitable, diverse industry and reinsurers in Africa need to be equipped with the essentials to accommodate these diverse portfolios.

6.2. Africa as an emerging market

Africa is seen as the continent of growth and development. Confidence in policies and institutions needs to be established for investment to flourish. This confidence can only come from an adherence to stringent regulation and compliance *(Waweru, 2014)*. The study concluded that audit quality and company performance were the driving forces behind quality corporate governance and African companies had demonstrated a sincere adherence to policy and procedure with compliance being of utmost importance.

South Africa features as the ninth country in the world when ranked by corporate governance levels, bearing testament to the sophistication of the South African corporate, financial landscape. With corporate governance failure identified as one of the key symptoms of economic decline *(Claessens & Yurtoglu, 2013)*, this data suggests South Africa is exhibiting indicators of economic failure.

"In the emerging markets, non-life premiums grew by 8 percent in 2014, with the key drivers being profitable gains in China, primarily on the motor and agricultural lines of business, and in India where an improvement in business sentiment and economic growth boosted premiums. In both the advanced and emerging markets, the post-crisis annual average premium growth rate has fallen short of the pre-crisis pace." *(Swiss Re, 2015)*

Evidence that Africa is on an upward growth trajectory can be found in almost every facet of the financial services sector, yet individual companies are seemingly not privy to this transformation. Rauch & Wende (2015) emphasised the importance of the consistent monitoring of a company's solvency ratios to manage the accumulation of debt obligation. The ability to offer increased capacity and accumulate further debt is reliant on the balance sheet strength of the reinsurer. Not unlike any other corporate enterprise, the reinsurer has a balance sheet to manage, shareholders to report to and capital to utilise to generate profitability. The reinsurance company must maintain a very delicate balance between assets and liabilities in order to grow strategically *(Borschied, Gugerli, James, & Straumann, 2013)*.

The complexity in reinsurance decision making lies in integrating the reinsurance into the various aspects of the insurance companies' operations such as meeting statutory financial requirements, creating technical insurance reserves, acquiring the optimal insurance portfolio of risks and achieving a profitable loss ratio. The reinsurance decision impacts all of these elements as the risk transfer must enhance the likelihood of profitability and not worsen it *(Ciupek, 2013)*.

Enhancing a company's profitability refers once again to its balance sheet strength and solvency. A solvency ratio is defined as the ratio of the company's debt to equity or total debt to assets and provides an assessment of the likelihood that the company will continue accumulating its debt obligations *(Rauch & Wende, 2015)*.

The International Association of the Insurance Surveillance Institutions (IAIS) defines the solvency margin as a representation of the positive difference between assets and liabilities, under the conditions determined in accordance with their country-specific standards and evaluations. This difference should always exceed the level determined by the standards regarding the minimum limit of the solvency margin *(International Association of the Insurance Surveillance Institutions, 2014)*.

The average solvency ratio for the African-based reinsurers is 52 percent with the lowest being 11 percent and the highest 94 percent. The average for the non-African reinsurers is 19 percent with the lowest being 3 percent and the highest 38 percent. These results could imply that perhaps the ratings accorded to reinsurers by the credit rating agencies are in fact are justified. However, a valid point to note is the African reinsurers were all assessed based on their ratings from the Global Credit Ratings Company, and the offshore reinsurers on their Standard and Poor's ratings.

Alsakka & Gwilym (2012) have evidenced that rating discrepancies across agencies occur more frequent for sovereign ratings than for corporate ratings. The authors report that in their sample of sovereign ratings, Moody's and Standard and Poor's disagree on 50.6 percent of regular ratings, while Moody's and Fitch have different sovereign ratings in 46.9 percent of the observations. Standard and Poor's and Fitch have by far the lowest frequency of disagreement (35.9 percent). Three reasons have been identified to clarify the high level of rating discrepancy: (1) rating agencies utilise varying factors when

conducting their assessments and assign different weightings to these factors; (2) the discrepancies seem to arise around speculative-grade entities where data may not be sufficient for optimal assessment; and (3) some agencies may tend to favour issuers within their domiciled region.

With emphasis on that final point, the Global Credit Rating Company prides itself on being tailored for the African market and claims to be a leader in African risk assessment *(Global Credit rating Company, 2015)*. The basis of the credit rating criteria is both different and undefined, and potentially skew the results of the analysis. This dilemma raises a number of issues regarding Africa and its risk environment.

6.2.1. African reinsurers and their risk exposures

Drawing on the research data, it is clearly evidenced that African reinsurers operate vastly smaller businesses than their global competitors. The reasons behind their stunted growth have been suggested throughout the document, and warrants closer investigation.

With the exception of a few such as African Reinsurance Corporation and Continental Re, the majority of reinsurers in Africa generate low incomes and have relatively low capital bases. In order to build up their capital, they need to attract income, and in order to do that, they need to be well-rated. As it currently sits, the international credit rating agencies will not consider these companies based on their size, obliging them to rely on regional rating agencies that do not exert the reputational influence that the global ones do. These reinsurers are faced with a cyclical dilemma of being unable to attract income or mature their capital to an adequate scope that affords them international credit rating status.

Emerging countries affected by insurance gaps (2013) examines natural disaster loss data over a period of 32 years showed that 79 percent of fatalities occurred within emerging markets. However, due to the lack of sophistication in insurance, the insured losses emanating from these regions represented less that fifteen percent of worldwide insured paid losses. "To reduce the gap in natural catastrophe loss funding in emerging and developing countries, sustainable insurance-based coverage programmes have to be developed and implemented. The insurance and reinsurance industry has the

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worldwide experience and internal capacity to break new ground in these developing markets" (Emerging countries affected by insurance gaps, 2013).

These insurance gaps signify a huge market opportunity for the reinsurers domiciled in emerging markets, as the insurance and reinsurance industry needs to innovate, and tailor solutions to bridge that gap. The study also signals the dominance of low-valued risk exposure in the emerging markets. Focussing on Africa, the possibility of major catastrophic event is low and the regional reinsurer has a truncated probable loss exposure. In comparison, the global non-African reinsurer is exposed to hurricanes, floods, typhoons and tsunamis worldwide, and recent history has amplified the possibility of these occurrences.

From a damages and legal liability point of view, Africa is not considered to be a highly litigious environment and claims arising from liability are not common. In the instances they do occur, payment is frugal compared to the international environment, mainly driven by affordability (Demirgüç-Kunt, Klapper, & van Oudheusden, 2015).

6.2.2 The Possible African market Solution

The evidence thus far indicates that the regional reinsurers are subject to a far less volatile insurance atmosphere when compared to their global competitors. The large value of reserves and assets on the balance sheets of these international corporations validate their positions as global reinsurers with highly diversified portfolios of business. The regional reinsurers are accustomed to far less diversification and, while their balance sheets are infinitely smaller, their profitability and risk management skills have enabled them to stay in operation for a number of decades.

Exposing these reinsurers to the instability of global catastrophe risk could jeopardise their long term sustainability as their balance sheets may not be suitably equipped to capitalise such exposures. Global exposure, while highly advantageous to the diversification of their portfolios, makes them vulnerable to major catastrophe loss events and susceptible to failure (United States Securities and Exchange Commission, 2012).

The nature of the reinsurance environment in emerging markets can be likened to the non-standard risks such as Parmalat, Enron and Asia. These entities posed very atypical

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characteristics compared to the general risk profile and the lack of understanding of these unique characteristics led to the failings that ensued (Buchanan & Yang, 2009). Emerging market risk, particularly the African environment, poses the same concern as it should be classified as non-standard risk, and assessed differently from any other counterpart.

The trepidations raised in section 6.1 around the African reinsurers' dilemma noticeably stresses the core problem surrounding reinsurance in Africa. To recap, there is a total of 46 billion US dollars in insurance premiums being generated in the African market with a mere 1.5 billion US dollars retained on the continent as reinsurance premiums, equating to 3.26 percent of the primary market insurance spend. Applying the global average of 7.21 percent, the approximate reinsurance premium captured in Africa should be 3.3 billion US dollars, intimating that more than half of the reinsurance capacity required by African insurers is imported from global offshore markets.

African reinsurers desperately need to increase their competitiveness in their own market. The mechanism by which their growth and development can be sustained in the long term lies in their ability to retain local premium locally. This premise is supported by the findings of UNCTAD (2015), where the report succinctly stated that the extent to which corporations are capturing and retaining insurance premium on the continent will ultimately define and navigate the future of the African insurance industry.

6.3. Credit Rating Agencies

Credit rating agencies have been criticised for their role in the financial crisis of 2008 as they underestimated the credit risk associated with structured credit products. According to the International Monetary Fund (IMF), over seventy percent of all private residential mortgage backed securities issued in the United States from 2005 to 2007 that were rated AAA by Standard & Poor's are now rated below BBB-, i.e. below investment grade. "While downgrades are expected to some extent, a large number of them, in particular when they involve several notches at the same time or when the downgrading takes place within a short period after issuance or after another downgrade, are evidence of rating failure." (Pagano & Volpin, 2010)

The criticism of credit rating agencies extends to their sovereign rating activities. They were initially condemned for failing to predict the Asian crisis, then for exacerbating the crisis when they downgraded the countries' sovereign ratings in the midst of the financial turmoil. More recently it has been argued that the downgrading of European sovereigns of countries like Greece, Ireland, Portugal and Spain has intensified the fiscal problems still being suffered.

There exists strong evidence to suggest that credit rating agencies may not always succeed in their task of identifying, monitoring and precluding financial loss. Their track record indicates that perhaps adjustments and amendments are required for the assessment of specified risks, such as non-standard ones.

The most substantial influence international credit rating agencies have had on African reinsurers is by way of their sovereign ratings as all companies operating within a particular country are governed by that sovereign rating as a company may not maintain a rating higher than the sovereign rating of the country in which they are domiciled.

"Sovereign ratings are particularly important for emerging economies because risk is greater and information can be of lower quality than for developed economies. Investors pay close attention to sovereign ratings when investing capital in emerging countries. Credit risk changes are more frequent in emerging economies and large changes can occur quickly and unpredictably." (Alsakka & Gwilym, 2012)

Changes in sovereign debt ratings and outlooks affect financial markets in emerging economies far greater than developed markets. The sensitivity to changes in sovereign ratings has been a popular field of study and various theorists have come to the same conclusion – developed economies are highly resilient to change and display an air of stubbornness to rate adjustments (Alsakka & Gwilym, 2012). There tends to be a more volatile response to rating adjustments in emerging markets internally, as well as from their international trading partners. The effects of rating and outlook changes are stronger during crises, in non-transparent economies, and in their neighbouring countries. Upgrades tend to take place during market rallies, whereas downgrades occur during downturns, providing support to the idea that credit rating agencies contribute

to the instability in emerging financial markets, both positively and negatively (Kaminsky & Schmukler, 2002).

Bearing testament to the effect of sovereign rating downgrade, the independence of previously mentioned reinsurers in the African market, namely African Reinsurance Corporation, Munich Re of Africa, SCOR Africa and General Re, was pilfered away as they were forced to request parental guarantees from their off shore holding companies. To qualify their financial positions and retain their clients, they were obliged to surrender certain elements of control within their businesses in return for the parental rating that secured their income stream.

Rating agencies seemingly apply one set of standard requirements across the financial sector, without taking into account the vagaries that are endemic to specific regions. Their failure to contain some of the greatest financial implosions in recent history speaks to the necessity for them to exercise increased flexibility and innovation in assessing creditworthiness (Cane, Jodar, & Shamir, 2012).

While the results of the regression analysis were unable to support the views and opinions expressed by various researchers over the years, the results did not dispute these views either. It becomes apparent that the existing system of credit rating and credit rating methodology requires augmentation to accommodate these non-standard risks and account for their distinctiveness.

Africa, and the emerging market in general require a mechanism to advance their level of competitiveness with each other. Remaining acquiescent that the regional reinsurers are not financially adept to managing and supporting international risk exposures, the solution to their problem may lie within their home countries and extend to all other emerging markets around the world.

What credit rating agencies have established over the years is a global standard that firms are encouraged to aspire towards. In the developed financial services sector, these standards are achievable as the wealth and capital exist in these markets to support the balance sheets. Firms operating in the emerging market sector are depicted as sub-standard as the environment does not gear them towards achieving that prescribed global standard.

The differences between developed and emerging economies have been established, acknowledged and accepted, so perhaps international credit rating agencies should recognise the emerging market economy as a separate entity and devise a rating scale and assessment methodology particular to that sector. This would enable reinsurers in the emerging market to attain the required credit rating of A- or better to attract and retain their business volumes and drive growth and development within the sector, whilst allowing insurers access to well-rated security, affording them maximum capital relief benefit and instilling confidence in their decision to utilise regional reinsurance security.

Berkmen, Gelos, Rennhack & Walsh (2012) state that contagion is an outcome of the risk perception of financial markets solely dependent on the behaviour of investors or other financial market participants. This implies that investment into a company will be determined by perception and encouraged by market participants' trading behaviours. If corporations are encouraged to purchase their local, emerging market reinsurance capacity and this becomes common practice, studies around market contagion and influence (Chevapatrakul & Tee, 2014) suggest that the entire market will gradually evolve into the new paradigm of reinsurance purchasing.

The notion of a two-pillar approach to credit rating methodology was explored by Fitch Ratings with regards to South African insurer Santam. Santam is the largest general insurer in South Africa with a 24 percent market share (KPMG, 2015), generating premium volume of 1.65 billion US dollars (or 22.7 billion South African Rand) in 2014 (Santam Financial Results, 2014).

Fitch Ratings awarded Santam a National Insurer Financial Strength (IFS) rating of AA+ (zaf) and a National Long term rating of AA (zaf) which are both country specific ratings. In a statement released by Fitch affirming this rating in 2014, Fitch states that it "believes that Santam is adequately capitalised based on the agency's own risk-adjusted assessment and the regulatory statutory requirement" (Santam, 2014).

Fitch Ratings have begun to issue these National Ratings in instances where the foreign and local currency sovereign ratings are below AAA, for the primary purpose of serving the needs of the local market in question (Fitch Ratings, n.d.). Fitch explain that the

National Rating scales serve to measure the relative creditworthiness of the entities rated within that country by ranking the degrees of perceived risk relative to the lowest default risk in the same country.

Identifying the general rating issue faced by emerging markets, Fitch's innovation allows companies the opportunity to compete more effectively and fairly in the financial services industry. They have grasped the concept of market perception and the impact it has on the aptitude for local businesses to operate proficiently, and their solution addresses this basic need to appeal to the confidence of investors and business partners.

6.4. Conclusion

Statistical regression in the results presented in Chapter 5 generated inconclusive results to reasonably test the research hypothesis presented in Chapter 3. However underlying consistencies in the data collated for analysis identified marked differences between the characteristics and structure of reinsurers domiciled in Africa and of global non-African reinsurers. These underlying trends in the data were sufficient to support the stated objectives of the research and to present considered arguments from them.

Chapter 7: Summary of Findings

7.1. Introduction

This chapter synthesises the research and presents key findings relative to the challenges faced by the reinsurance industry in Africa arising from the activities of rating agencies. It continues to propose a framework to establish a better aligned approach for rating agencies to Africa and emerging markets credit risk and offers recommendations for future research.

7.2. Key Findings

Reinsurance is a contract by virtue of which an insurance company shares its debt obligation and in turn receives protection against an excessive loss or accumulation of losses whilst benefitting from the capital relief the reinsurance contract affords it. The value of reinsurance has been established, and the demand for highly-rated reinsurer capacity will rise concurrently with the development and sophistication of the financial services sector in Africa. The upward growth trajectory that Africa is currently experiencing is bound to continue with the International Monetary Fund estimating that Africa will have the fastest growing economy within the next five years (KPMG, 2015).

It is estimated that the level of insurance penetration in South Africa is 14.1 percent, with the corresponding figure for the entire continent only 2.9 percent (Swiss Re, 2015), leading to the fact that the potential growth of the insurance industry in Africa is phenomenal. With insurers and reinsurers alike having realised their market offering was misaligned to their clients, they have started tailoring innovative insurance solutions for their captive audiences, with the objective of improving that insurance penetration ratio dramatically in the future. The complexity however for African-based reinsurers lies in how to greater retain the growth in insurance revenues on the continent.

Credit rating agencies have been criticised for their role in major financial crises in developed markets over the past decade and their inability to foresee or respond to non-standard risk has been clearly evidenced. Investment by rating agencies has been focussed upon understanding systemic risk in developed markets and little to no

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investment has been made in improving understanding or developing a better framework for emerging market risk. Financial crisis in emerging markets will remain a perennial one that cannot be recovered from whilst the rating agency dependency remains and buyer paradigms of security ratings do not change. As the subject of poorly-rated reinsurance security is endemic to the emerging market, negligible research has been conducted to understand the problem or quantify its impact. Rating agency investment is limited given limited profits can be derived from better understanding emerging market risk versus developed market risk. Rating agencies are commercial enterprises and delivering shareholder value remains their primary focus at all times. Furthermore, as a broadly unregulated industry they cannot be leveraged and are not compelled to act philanthropically.

This report is the first to focus on this specific problem in Africa and has managed to highlight arguments and themes that warrant further research and investigation in order to gain a more comprehensive understanding. A recommendation for further research is the development of a coherent and usable model for emerging market ratings.

The key findings from the research can be summarised succinctly by the following table:

Table 13: Summary of key Findings

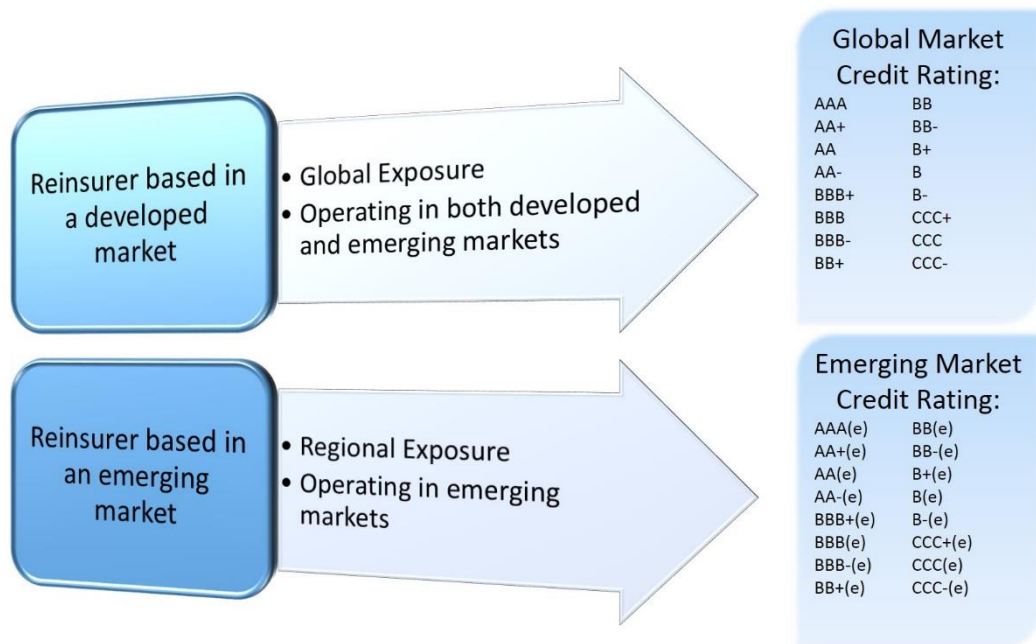|	Non-Africa	Africa Only	Total
2014 Insurance Premium	2 609 billion USD	46 billion USD	2 655 billion USD
Percentage Split	83%	17%	100%
2014 Reinsurance Premium	190 billion USD	1.5 billion USD	191.5 billion USD
Percentage Split	99.3%	0.7%	100%

Applying the global average of 7.21 percent of primary insurance premium spent to purchase reinsurance cover, the approximate reinsurance premium captured in Africa should be 3.3 billion US dollars, intimating that more than half of the reinsurance capacity required by African insurers is imported from global offshore markets.

With global market practice prescribing the use of A- or better reinsurance security ratings, the credit ratings of reinsurers in Africa do not meet minimum requirements and are commonly overlooked as a result. Credit rating agency activity has eroded investor and insurer confidence in African reinsurers by virtue of the poor ratings they obtain. Having established that the emerging and developed economies occupy vastly different risk and exposure landscapes, and acknowledging that regional reinsurers are likely not financially or technically geared to compete in the global arena, their competitiveness within the emerging market sector needs to be enriched.

Considering reinsurers in Africa would typically seek to reinsure African business, they are not directly exposed to the major catastrophe losses that occur globally. Global reinsurers are however exposed to global loss volatility and can be exposed to multiple major losses across the world at any one time. The values of reserves observed in Chapter 6 are indicative of the magnitude of modelled loss activity predicted by the global reinsurer models and the capital adequacy required by their regulatory environments. With African-based reinsurers broadly unexposed to global catastrophes, their balance sheets are quite correctly not required to hold such high levels of regulatory capital. They are however in a position of financial strength that should enable them to provide regional capacity for the regional risks their clients are insuring. The mechanism to encourage this local risk transfer, or perhaps transfer between emerging markets, firmly lies in establishing a recognised alternate credit rating methodology.

Fitch ratings have already pioneered the concept of national ratings to instil and develop investor and insurer confidence in local markets. They have understood the theory behind market perception and behaviour and have opted to invest in a corrective measure to overcome this. Expanding on the concept, and developing the model from country-specific to emerging market relevance would create a globally accepted benchmarking structure for developing countries to utilise. Identical to the current ratings scale, a two-pillar model could be built to enhance market access and competitiveness globally.

Figure 5: Two-Pillar Model for Credit Rating System

Global Market Credit Rating:	
AAA	BB
AA+	BB-
AA	B+
AA-	B
BBB+	B-
BBB	CCC+
BBB-	CCC
BB+	CCC-

Emerging Market Credit Rating:	
AAA(e)	BB(e)
AA+(e)	BB-(e)
AA(e)	B+(e)
AA-(e)	B(e)
BBB+(e)	B-(e)
BBB(e)	CCC+(e)
BBB-(e)	CCC(e)
BB+(e)	CCC-(e)

Reinsurer based in a developed market
• Global Exposure
• Operating in both developed and emerging markets

Reinsurer based in an emerging market
• Regional Exposure
• Operating in emerging markets

7.3. Recommendations for future Research

The research has provided substantial evidence of a relationship between global credit rating agency activity and the lack of competitiveness of African reinsurers. The challenges encountered through this research process were largely centred on data and transparency. Improvement in the data quality and granularity would serve to widen the scope of the analysis and in turn generate more credible, significant results. Richer data and perhaps a greater sample could seek to improve the empirical evidence that rating agencies are not geared towards non-standard or emerging market risk and their methodologies not supportive of emerging market economies.

Future research would be best focussed on the development and parameterisation of a model for emerging market risk. The lack of transparency around credit rating methodology resulted in the creation of a number of assumptions and consequentially, numerous limitations. Research based on identifying the key factors that should be quantified in order to calculate a measure of creditworthiness will assist in greater transparency and clearer understanding.

The complexity surrounding the integration of such a model into rating agencies' systems and achieving global recognition and acceptance of this model would be a practical avenue for further research.

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