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ROBUSTNESS OF RISK BASED CAPITAL MODELLING IN KENYA: A COMPARATIVE STUDY OF KENYA'S AND MALAYSIA'S RISK BASED CAPITAL FRAMEWORKS

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DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the Research Proposal contains no material previously published or written by another person except where due reference is made in the Research Proposal itself.

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ABSTRACT

Many countries are taking a keen interest in monitoring the capital adequacy ratio of the operating insurance countries. This has led to the development of different frameworks to measure capital risk e.g Solvency II, Risk Based Capital (RBC). Though most of these frameworks have been formulated by developed countries, other nations are formulating frameworks to suit their needs based on the nature of the insurance sector instead of adopting a "one-size fits all model". Some of these countries include: South Africa, Malaysia, Kenya. Kenya's insurance sector is fairly young hence the Insurance Regulatory Authority began developing a Risk Based Capital framework recently. This paper compares the robustness of the Risk Based Capital frameworks between Kenya and Malaysia since the latter's framework has been in existence for a longer period. The comparison will help in the validation of Kenya's framework if there are similarities between the capital adequacy ratios .

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List of Abbreviations

IRA	Insurance Regulatory Authority
CIRC	China Insurance Regulatory Commission
C- ROSS	China's Risk Oriented Solvency System
RBC	Risk – based capital
SUSEP	Superintendence of Private Insurance
SST	Swiss Solvency Test
IPEC	Insurance and Pensions Commission
SAM	Solvency Assessment Management
NT	National Treasury
MCR	Minimum Capital Requirement
AKI	Association of Kenya Insurers
CBS	Compliance based supervision
RBS	Risk- based supervision
ILS	Insurance- linked securities
SCR	Solvency Capital Requirement
ORSA	Own Risk and Solvency Assessment
SFCR	Solvency and Financial Condition Report
RSR	Regulatory Supervisory Report
FOPI	Federal Office of Private Insurance

CHAPTER 1: INTRODUCTION

1.1 Background Information

Insurance involves transferring pure risk from the insured to an insurer that is financially stable so that the latter pays for the loss incurred by the insured. Insurance companies are tasked with managing risk at optimality by determining risk to be retained, amount of risk to be transferred (reinsurance) and the risk model to be used to optimize costs under insurance risk management. The reasonableness of solvency, regulation and supervision is at the heart of operation of the insurance industry and underpins the prospect of insurers contribution to the financial sector and the economy (Thorburn, 2004). The aim of supervising insurance is to protect the needs of the policyholder by properly utilizing the funds and resources available. Under non- life insurance, the solvency margin requirement is determined on a fixed ratio basis approach whereby it is a function of the greater of a minimum amount, a percentage of premiums and a percentage of claims provisions (Thorburn, 2004).

The key interrelated concepts that will help optimize insurance are risk, capital and value. This makes the study focus on economic capital frameworks like Solvency II, Swiss Solvency Test and Enterprise Risk Management. These frameworks represent the economic-and-risk-adjusted value under the economic balance sheet while reflecting the risk profile of insures under risk-based target capital. These risk- based frameworks are great at assisting management in coming up with risk strategies that align with risk appetite and optimize economic value on a risk-adjusted basis (Courchene & Robert, 2016).

Insurance solvency regulation is key in ensuring that insurers have enough capital to meet the needs of the policyholders and run their operations. The economic crisis of 2007-2009 had a long lasting and profound influence on financial services sector around the world (P.Hartwig, Weisbart, & Lynch, 2015). This made countries focus on improving

solvency regulatory regimes to strengthen financial stability in the insurance sector. China through the China Insurance Regulatory Commission (CIRC) has been developing its capital regime, China's Risk Oriented Solvency System (C-ROSS). C-ROSS is based on giving the market a decision role in resource allocation so as to allow free- market forces to operate so as to stimulate innovation and effectively identify, analyze and measure the risk profile of insurers more accurately and promptly (P.Hartwig, Weisbart, & Lynch, 2015). It also consists of a three- pillar framework hence it can be compared to the E. U's Solvency II framework. Countries in Latin America such as Brazil, Chile and Mexico are also spearheading the risk- based solvency capital regimes. In Brazil, a hybrid risk-based capital (RBC) that focuses on regulating risks like credit, market, operational was implemented by the Superintendence of Private Insurance (SUSEP). Chile is improving its RBC using a value-at -risk methodology through the Superintendence of Securities and Insurance so that insurers can undergo self- assessment of their risk management and capital sufficiency (P.Hartwig, Weisbart, & Lynch, 2015). Mexico's regime has borrowed heavily from, U.S regulations, the Swiss Solvency Test (SST) and Solvency II but taking into consideration stress scenarios like earthquakes, hurricanes exposure.

African countries are also trying to come up with capital-based frameworks that suit their needs. In Zimbabwe, the Insurance and Pensions Commission (IPEC) is developing a risk-based capital framework focused on reducing the minimum regulatory capital requirements to enable an insurance company to mitigate risks they are exposed to. According to IPEC, insurers are unable to meet the MCR of $2.5 Million for non- life insurers as the capital requirement is too huge for the insurance company to handle (Mhundwa, 2019). Zimbabwe is now focusing on inclusion of micro-insurance by accommodating them under the risk- based capital framework by reducing the proportionality principal through relaxing capital requirements for micro- insurers according to the risks being mitigated.

South Africa's solvency regime, Solvency Assessment Management (SAM), is a framework that was established by the Financial Services Board (FSB) and National

Treasury (NT). SAM has borrowed heavily from the E.U.'s solvency II framework hence establishing three pillars: pillar I focuses on capital adequacy, pillar II focuses on systems of governance and pillar III focuses on reporting requirements. SAM aims to develop a proportionate ,risk- based approach with appropriate treatment of small insurers and large, cross- border groups (Khoza, 2015). Pillar I under SAM differs to that of Solvency II since diversification is not allowed and also limits the extent at which insurers take into account illiquidity premium or matching adjustment, by allowing matching adjustment for annuity business and limit magnitude of adjustment (Ernst &Young Global Limited, 2016). This means that large life insurers do not fully recognize matched assets and liabilities. SAM aims to strengthen the governance structure of insurance companies by being aligned to the King Code of Corporate Governance Principles (KING III). KING III identifies that it is unfair to use a "one-size-fits-all" method because companies deal with different types of business hence different risks. The application of SAM framework will enable insurance companies to compete at international standards and hence be able to operate in European countries.

Africa is a continent where most people run small- to-medium enterprises (SMEs), own small-scale farms and are low income earners hence making Micro Insurance a key factor that will increase insurance penetration and financial inclusion. A recent report on the Landscape of Micro-insurance in Africa report indicates that $647 million was underwritten under Micro Insurance from 62 million covered (Mhundwa, 2019). African countries need to adopt comprehensive risk- based framework that is not standardized to determine the minimum capital requirement (MCR) but a model that can be altered based on the economic conditions at a time through stress scenario tests. Some of the scenarios that can be analyzed are political periods, harsh weather patterns.

1.2 Kenyan Insurance Industry

As of 7th January 2020, there are 4 reinsurance companies, 56 insurance companies that have been authorized by the Insurance Regulatory Authority to carry out insurance in Kenya. The business of non- life insurance includes marine, aviation, engineering, industrial fire, domestic fire, liability, private motor, commercial motor, theft, workmen's compensation, miscellaneous, micro-insurance and personal accident. Takaful insurance products cater for the Muslim population. Only two companies in Kenya offer takaful products while it is only Kenya Re that has come up with a reinsurance product that complies to Sharia.

The insurance industry in Kenya is regulated by the Insurance Regulatory Authority based on the amended Insurance Act of 2006, CAP 487 of the Kenyan laws. Before the Insurance Act, CAP 487 was enacted in 1986, insurance in Kenya was regulated by the UK regulation according to the Companies Act of 1960.

Kenya is on a mission to introduce a number of regulatory changes to the insurance sector, including moving towards risk based capital, increased capital requirements, assigning new guidelines for short- term business and takaful rules (Oxford Business Group, 2016).According to the Insurance Act as at February 2020, the minimum capital requirement is determined by risk based capital. The MCR for a non- life insurance company is higher than Kshs. 600 Million. The MRC should include: government bonds, Treasury bills, cash and cash equivalent, deposits and cash that have a maximum of 10% in a bank in group of banks (Insurance Regulatory Authority, 2010). The deadline for adopting the Risk Based Capital (RBC) requirement for the insurance sector in Kenya is June 2020.

According to the Association of Kenya Insurers (AKI), the performance of the insurance industry decreased in 2018 to 3% growth while it was 6.5% in 2017. The gross domestic product (prices) expanded by 4.9% in 2018 while insurance penetration reduced from 2.68% in 2017 to 2.43% in 2018 (Insurance Regulatory Authority, 2019). Non- life

insurance gross written premium grew to Ksh. 128.85 billion from Ksh. 126.05 billion in 2017 while the profits after tax dropped by 61.56% to Ksh. 3.54 billion from Ksh. 9.21 billion recorded in 2017 (Association of Kenya Insurers, 2018).

The trends that ruled 2018 were the regulatory developments, technological developments and new insurance markets which can be attributed to mergers and acquisitions. Kenya has not been left out in technological advancements: a virtual motor insurance certificate has been developed by the Association of Kenya Insurers to prevent motor insurance fraud. To ensure sustainable growth and stability of the industry, IRA transitioned from Compliance Based Supervision (CBS) to Risk Based Supervision (RBS) (Kamau, 2013). RBS can clearly outline the types of risks than an insurance company is exposed to when doing business.

1.3 Why Malaysia?

The Malaysian Risk Based Capital (RBC) framework was issued by Bank Negara Malaysia in April 2007 but fully implemented in January 2009 (Lazam, Tafri, & Shahruddin, 2012). Since the implementation of this RBC in 2009, no insolvency case has been recorded in Malaysia.

According to the World Bank, Malaysia and Kenya are developing and emerging economies. The insurance penetration rate in Kenya and Malaysian are very similar, Kenya's rate being 2.43% of GDP – Gross Domestic Product while Malaysia's rate is 1.23% of GDP.

1.4 Problem Statement

Solvency regulation is an important factor that should not be left out when running an insurance company hence the study focusing on risk- based capital framework to measure solvency. Insolvency can lead to failure of an insurance industry since most operations of that insurance company come to a halt. Most potential policyholders in that economy may lack trust in the insurance industry hence avoiding taking up insurance policies. Most potential policyholders normally research on the financial soundness of an

insurance company (Ismail, 2013) The Insurance regulatory Authority (IRA) has introduced Kenya's Risk Based Capital framework to minimize insolvency.

Solvency is important in the management of an insurance company since one needs to ensure that they can meet the needs of the policyholders who pay premiums to them in exchange of protection due to financial loss. Failure to check for solvency in a company will give that company a false sense of security that will eventually lead to their collapse due to difficulties to allocate enough capital to carry out operations. In recent years, some of the insurance companies in Kenya have collapsed, gotten deregistered or put under statutory management. They include: Standard Assurance Ltd, Concord Insurance Company, Blue Shield Insurance Company, United Insurance Company.

The robustness of Kenya's Risk- Based Capital framework is best checked if there is a comparison of a Risk Based Framework that has already been implemented in a country where the insurance industry is similar.

1.4 Research Objectives

- To evaluate the adequacy of capital under each Risk- Based Capital Framework: Kenya's and Malaysia's.
- To evaluate the robustness of Kenya's Risk - Based Capital framework.

1.5 Research Questions

- Is the Kenyan Risk Based Capital framework adequate for solvency purposes?

1.6 Significance of the research

The insurance global scene is changing drastically, and this is making traditional insurance risk measures difficult to fully depend on. Africa is also a key player in insurance despite penetration of the latter being low. There needs to be a better understanding of insurance decision making, the different levels of risk appetite and the emerging capital-based frameworks other than risk measures. The adoption of emerging capital-based frameworks will enable non- life insurance companies in Kenya maintain international standards.

This study will be beneficial to insurance companies internally by shedding light on alternative methods that a company can use to calculate the economic capital.

The Insurance Regulatory Authority of Kenya will also be able to improve the existing Risk Based Capital framework by incorporating lessons that will be learnt from the Malaysian Risk- based model.

The policyholders will also benefit from the research since they will be able to trust the non- life insurance companies since they are sure that the solvency is being regulated hence transparency of the risk management process.

Insurance brokers in the industry will also benefit from this research since they will be able to soundly advise potential clients on the insurance companies to invest in with the guidance of the solvency requirements.

The study will also help insurance consumers to make a sound decision when choosing an insurance company to provide protection against financial loss that they may suffer from. The use of capital-based frameworks to determine the solvency of an insurance company will increase the consumer's trust in the management of capital efficiently if the company is able to meet the minimum capital requirement.

CHAPTER 2: LITERATURE REVIEW

The use of risk - based capital requirement began with Canada in 1985 and the US followed suit in the 1990s. RBC is an approach that determines the adequate capital requirement based on a company's risk profile. Asia is also not left behind with implementing Risk- based Capital requirement: Indonesia adopted RBC in 1999, Singapore in 2004 while Malaysia in 2009. RBC models and Solvency II use a fixed minimum amount of capital approach, which is a "one-size-fits-all."

Most Risk- Based capital frameworks are derived from the Solvency II framework. Solvency II determines capital adequacy based on true nature and extent of risks faced by insurance companies (Sammut, 2008). This is facilitated by Pillar I, quantitative aspect of the RBC, where the valuation of standard liabilities to policyholders and capital requirements with respect to risk.

A well-designed RBC requirement can help achieve an efficient reduction in expected cost of insolvencies. A study on property liability insurers in the USA showed that RBC is likely to improve solvency regulation in the insurers by detecting insurers in trouble (Cummins & Scott E.Harrington, 1995). The impact of using RBC may encourage some insurers to reduce or allocate more capital to avoid not meeting the Risk- based Capital thresholds.

(Holzmuller, 2009). provides a detailed criterion that is to be met to determine the suitability of a Risk- Based Capital requirement. This was a comparative study of USA's RBC, Europe's Solvency II and Swiss Solvency test. It was decided that the criteria for an adequate RBC had to meet Cummins criteria as well as four additional criteria that took into consideration the insurance and capital markets. The additions include adequacy in economic crises and systematic risk anticipation, assessing management using internal models, flexibility of framework over a period in case there are new developments and analysis of the risk management.

(Yusof, Lau, & Osman, 2016). carried out an analysis of the Malaysian Risk- Based Capital to determine if it met the criteria of an appropriate Risk Based Capital framework. Malaysia's RBC was critically analyzed to determine if it satisfied the 11 criteria outlined by Cummins and Holzmuller. It was determined that Malaysia's RBC is a good measure since it was able to satisfy seven out of the eleven criteria requirements. However, various shortcomings came up that this model is a standard model that does not adequately cater for different companies.

A study was carried out to show the quantitative requirements under different solvency frameworks: Solvency II and RBC. (Liebwein, 2006) highlighted the risk factors that are important in mapping a company's risk position.

It is advisable for the insurance industry to move from statutory solvency frameworks that focus on generalizing the margins and risk appetite of the (re)insurers to Risk – Based Capital frameworks that are transparent in reflecting the true financial position mirroring a company's risks. The emerging RBC frameworks have a good foundation to rely on especially those from developed countries such as U.S.A's RBC framework. The RBC framework decides the minimum capital required based on a company's risk profile and the amount of funds needed based on the value of assets and liabilities of a firm to mitigate the risks plus a margin that facilitates smooth running of operations. If the financial strength of an insurance company is monitored well, it is easier for the regulator to intervene at an early stage to protect the needs of policy holders. The framework is aligned to each insurance firm to enable minimization of capital arbitrage (Richard Holloway).

2.1 Kenyan Risk Based Capital Framework

In Kenya, the risk-based capital is the square root of the sum of squares of capital based on credit risk, market risk and insurance risk plus operational risk capital. Capital under non- life business is held against premium reserves fluctuation and claims reserves fluctuation.

$$RBC = \sqrt{insurance\ risk\ capital^2 + market\ risk\ capital^2 + credit\ risk\ capital^2} + operational\ risk\ capital$$

Market risk capital protects against unstable price of assets in the market that are used to back policyholder's liabilities. This involves determining currency risk, equity risk and property risk capital. A capital charge is applied to balance sheet asset value when calculating market risk.

Credit risk capital mitigates against loss from default by a counterparty.

Operational risk capital protects against losses caused by failure of internal processes, staff and management. It is computed as the higher of:

- 30% of square root of sum of squares of capital for insurance risk, credit risk and market risk and
- 3% of gross earned premium over the last 12 months**Invalid source specified.**.

The National Treasury's cabinet secretary Henry Rotich proposed to increase the minimum capital requirement (MCR) and adopt a risk-based capital requirement that would facilitate the risk attributes of each insurance company. General insurers must boost capitalization from Ksh. 300 million ($ 3.3 M) to Ksh. 600 million ($ 6.6 M), life insurers from Ksh. 150 million ($1.65 M) to Ksh. 400 million ($ 4.4 M), general reinsurers from Ksh. 500 million ($5.5 M) to Ksh. 1 billion ($ 11 M) and life reinsurers from Ksh. 300 million ($ 3.3 M) to Ksh. 500 million ($ 5.5 M) (Oxford Business Group, 2016). The MCR

of a general company is the higher of the minimum paid up capital KES. 600 Million, RBC or 20% of net earned premium of previous year. A company that offers insurance products and takaful products is supposed to separate the funds and report takaful windows distinguished from the parent company. The Sharia Supervisory Council is a board of religious scholars who approve the operations of takaful insurance.

The adoption of these reforms will enable the insurance industry to be competitive by not allowing a company with insufficient capital to operate. This will increase the trust in insurance companies by the policyholders.

2.2 Malaysian Risk Based Capital Framework

Malaysia's insurance sector is divided into Conventional Insurance and Takaful and is under the scope of Bank Negara Malaysia (BNM). The Malaysian Insurance Act (1996) regulates Conventional Insurance while Malaysian Takaful Act (1984) regulates Takaful business model. BNM adopted a risk- based supervision for both Conventional and Takaful businesses so that the insurance industry is stable and financially sound (Yusof, Lau, & Osman, 2016). The Malaysian Risk Based Capital (RBC) framework was issued by Bank Negara Malaysia in April 2007 but fully implemented in January 2009 (Lazam, Tafri, & Shahruddin, 2012). The RBC requires an insurance company to maintain the Capital Adequacy Ratio above the Supervisory Target Capital of 130% (KPMG, 2016). Ever since Bank Negara Malaysia (BNM) implemented the Risk-Based Capital Framework, the Malaysian Insurance industry has no case of regulatory action reported due to insolvency (Yusof, Lau, & Osman, 2016). The RBC framework focuses on credit risk, market risk, liability risk and operational risk.

A general business in Malaysia requires a minimum paid - up capital of MYR 100 Million under Bank Negara Malaysia. Moreover, the Minimum Capital Requirement paid -up under Labuan Financial Services is:

- 7.5 Million MYR for a general insurer and takaful business
- 10 Million MYR for a reinsurer and re - takaful business

- 300,000 MYR or 500,000 MYR for a captive license

The Risk Based Capital Framework determines the Capital Adequacy Ratio as (CAR):

$$\text{CAR} = \frac{Total\ Capital\ Available\ (TCA)}{Total\ Capital\ Required\ (TCR0} \times 100\%$$

Where:

TCA = the aggregate of an insurer's tier 1 capital (issued and paid up ordinary shares) and tier 2 capital (cumulative irredeemable preference shares) less tier 3 (deductions from capital e.g. goodwill and intangible assets)

TCR = Max [surrender value capital charges,(*credit risk capital charges* + *market risk capital charges* + *insurance liability capital charges* + *operational risk capital charges*)]

Credit Risk = Σ (exposure to counterparty * credit risk charge)

Market Risk = Σ (market exposure * market risk charge)

Insurance Liability = Σ [(value of unexpired risk reserves* risk charge) + (value claims liability* risk charge)

Operational Risk = 1% of total assets

2.3 Research Knowledge Gap in Literature

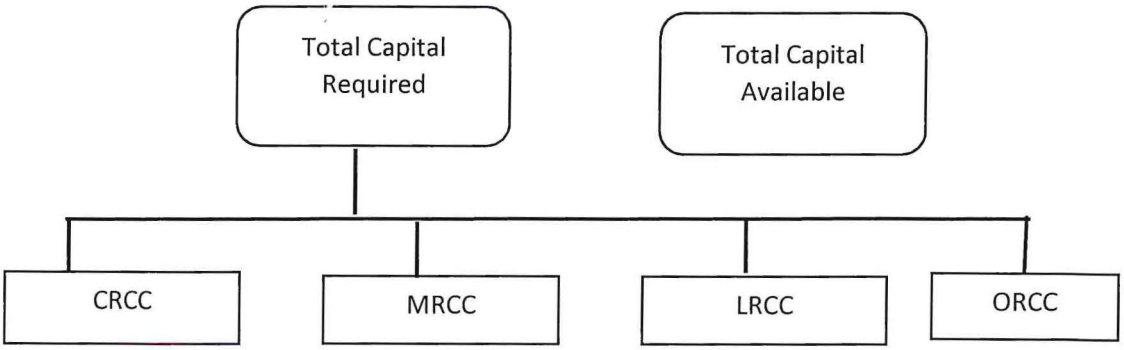
Most of the existing risk-based frameworks are brainchildren of developed countries in Europe, North America and Asia i.e. China. The majority of developing countries in South America, Africa and Asia pacific have not being able to develop their own frameworks that suit their needs.

In Africa, South Africa and Kenya have been at the forefront of developing their Risk - Based capital frameworks to cater for the young and growing (re)insurance industry. This is key so that the key stakeholders such as insurers, reinsurers, regulators and the insured

get a true depiction of the industry to enhance increased growth. Moreover, the frameworks will be tailored to suit the characteristics of this market such as micro-insurance, reliance of money transfer services.

This study aims at comparing Kenya's RBC that is yet to be fully implemented with Malaysia's RBC that has been there for the past nine years and works well since no case of insolvency has been recorded. Kenya might be able to borrow certain aspect from the model since it is a good benchmark since insurance industries in the two countries is quite similar. This will help increase the innovation and development of African Risk-Based frameworks and reduce reliance on foreign frameworks that operate at different spectrums.

2.4 Conceptual Framework



Where:

CRCC - Credit Risk Capital Charge

MRCC - Market Risk Capital Charge

LRCC - Liability Risk Capital Charge

ORCC - Operational Risk Capital Charge

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Research Design

The research design for this study is a comparative analysis. This is because the analysis will help to determine the relationship between the two Risk - Based Capital models by studying the different Capital Adequacy Ratios (CAR).

The nature of the research is both quantitative and qualitative. The quantitative aspect is due to the fact that the two risk – based capital frameworks will have different Capital Adequacy Ratios (CAR). The qualitative nature of the study is because of the different methods of calculating the risk components: credit risk, market risk, operational risk, insurance risk based on totally different risk charges to determine solvency requirement.

3.2 Population and Sampling

The population targeted for this study consists of all the licensed insurance companies on the Insurance Regulatory Authority (IRA) as of 2019. The study focuses on 15

insurance companies from the categories: life, and non- life insurance companies.

3.3 Data Collection

Data collected for this study is secondary data from annual reports on the Insurance Regulatory Authority and Association of Kenya Insurer's Website supported by annual reports published by the insurance companies. Another set of data will be collected from publication by Bank Negara Malaysia. The data collected is for 5 years between 2015 and 2019. This data is crucial in calculating the risk components:

- Market Risk = market risk capital charge per asset category*value of asset
- Insurance Risk = insurance risk capital charge*net insurance liabilities
- Credit Risk = credit risk capital charge*reinsurance recoveries

- Operational Risk = the higher of: (operational risk charge*(market, insurance, credit) risks) and 30% solvency capital and (capital risk charge*net premium growth) and 30% basic capital

3.4 Data Analysis

Analysis of data is done using Microsoft Excel. The data to be analyzed will be the outcome of the Capital Adequacy Ratios under the different Risk Based Capital frameworks. This data collected is crucial in calculating the risk components:

- Market Risk = market risk capital charge per asset category*value of asset
- Insurance Risk = insurance risk capital charge*net insurance liabilities
- Credit Risk = credit risk capital charge*reinsurance recoveries
- Operational Risk = the higher of 30% of square root of sum of squares of capital required for insurance risk, market risk, credit risk and 3% of gross earned premium for last 12 months

3.4.1 Analytical Models

Kenya's RBC:

$$RBC = \sqrt{insurance\ risk\ capital^2 + market\ risk\ capital^2 + credit\ risk\ capital^2} + operational\ risk\ capital$$

Malaysian RBC:

$$RBC = (Credit + Market + Insurance + Operational) risk\ capital\ charges$$

Capital Adequacy Ratio:

$$CAR = \frac{Total\ Capital\ Available}{Total\ Capital\ Required}\ x\ 100\%$$

CHAPTER 4: DATA ANALYSIS

There are different phases of carrying out the data analysis. They components involved are: insurance risk charge, market risk charge, credit risk charge, operational risk charge, total capital available, capital required and capital adequacy ratio.

Insurance Risk Charge

The insurance risk charge is calculated by using claim reserves and premium reserves. Different risk charges are used based on the class of business.

	Claim Reserves	Premium Reserves
Aviation	29%	39%
Engineering	4%	8%
Fire Domestic	2%	3%
Fire Industrial	6%	9%
Liability	9%	9%
Marine	8%	7%
Motor Private		
Property Damage	5%	5%
Liability	12%	12%
Property Damage	3%	3%
Liability	13%	13%

Property Damage	3%	3%
Liability	14%	14%
Personal Accident	9%	6%
Theft	4%	4%
Workmen's Compensation	19%	18%
Miscellaneous	6%	8%
Medical	13%	15%

Market Risk Charge

It entails the components as shown below with the respective risk charges

Equity Risk	
Listed Ordinary Shares on the NSE	30%
Listed Preference Shares on the NSE	30%
Unlisted Shares	40%
Property Risks	
Land and Self – occupied properties	40%
Investment propery and property related investments	30%

Credit Risk Charge

Securities	
Kenyan Government Bonds	0%
Foreign Government Bonds	5%
Corporate Bonds	12%
Term Deposits and Cash	
Term Deposits	0%
Cash and cash balances	0%
Debt Obligations	
Investments in Subsidiaries, Associates, Joint Ventures	40%
Mortgages	30%
Unsecured Loans	100%
Secured Loans	100%
Other Assets	
Outstanding Premiums	100%

Operational Risk Charge

Credit risk capital charges	
Market risk capital charges	
Insurance risk charges	
Basic operational risk charge 1	
Basic operational risk charge 2	
Prior Year Gross Earned Premium	
Prior Year Net Earned Premium	

Capital Required

	2019		2015	
Company	Kenya's RBC	Malaysia's RBC	Kenya's RBC	Malaysia's RBC
AAR	445,782.5	445,782.5	1,431,559	1,431,559
African Merchant	1,280,129	1,621,670	1,182,237	1,338,630
Corporate	601,700.2	765,266	446,879.6	588,940.6
GA	3,044,249	3,823,244	2,540,993	3,220,848
ICEA	1,484,354	1,949,323	1,629,508	2,143,681
Jubilee	2,563,467	2,563,467	5,405,752	6,119,581
Madison	1,008,531	1,234,245	1,096,281	1,270,432
Resolution	1,485,892	1,485,892	394,093.7	394,093.7
Sanlam	1,013,721	1,146,740	0	0

UAP	3,042,868	3,907,700	3,865,181	4,859,426
East African Reinsurance	809,900.1	1,067,807	1,328,150	1,641,141
Continental Reinsurance	1,105,281	1,105,281	689,624.5	707,715.9
Kenya Reinsurance	7,046,420	9,181,741	6,254,432	7,921,204

The respective results of calculating the Risk Based Capital using the Kenyan and Malaysian models are quite close. Most of the companies arrived at a similar RBC amount from the population of approximately 40 companies over the 5 years. The sample in the table above shows a higher percentage of companies with differing amounts which are close and in all cases, the highest capital required under RBC is given by Malaysia's model.

Capital Adequacy Ratio

Company	2019		2015	
	Kenya	Malaysia	Kenya	Malaysia
AAR	96.56	96.56	47.70	47.70
African Merchant	103.21	81.47	111.924	98.85
Corporate	110.39	86.79	107.39	107.39
GA	149.77	119.25	9.10	7.18
ICEA	312.59	238.03	45.29	34.42
Jubilee	80.49	80.49	40.41	35.69

Madison	74.81	61.13	143.44	123.78
Resolution	-50.8	-50.8	74.74	74.47
Sanlam	83.67	73.96		
UAP	219.1056	170.18	22.80	18.13
East African Reinsurance	452.36	343.1	75.98	61.49
Continental Reinsurance	78.22	78.22	135.25	131.79
Kenya Reinsurance	343.50	263.61	13.66	10.78

The regulatory authority, Insurance Regulatory Authority monitors the capital adequacy ratio and the relevant measures are taken based on:

If MCR < CAR < 110% - The IRA imposes restrictions on the company.

If 110% < CAR < 150%- The IRA works hand in hand with the insurance company to ensure a planis implemented so that CAR goes above 150%.

If 150% < CAR < 200% - The IRA does not need to pay close attention to the (re)insurance company but can help the (re)insurer solve any problems that arise.

The table above indicates that most companies do not have sufficient capital to carry out their operations. This means that the IRA needs to impose sanctions and closely monitor their business performance and come up with ways to improve their solvency.

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

5.1. Conclusion

The capital adequacy ratio of the different companies under Kenya's RBC and Malaysia's RBC are quite close while at other times, the CAR is the same. This shows that despite Kenya's RBC model being new, it will serve the purpose of checking the solvency of the (re)insurance companies. The similarity of the models is mostly attributed by the same risk components.

However, there is room for improvement since most companies have a CAR that is less than 150%.

5.2. Recommendations

The IRA should diversify into other models of checking the solvency of a (re) insurance company so as to avoid making conclusions based on a "one size fits all" model. The model borrow from the Solvency II model that measures the solvency of a firm based on its business and the risks it is exposed to. This is a better way of measuring solvency since a company might manage to mitigate its risk exposure according to its business portfolio without the Kshs. 600,000,000 Million stipulated as the minimum capital. Moreover, the MCR - Kshs. 600,000,000 might be too minimum for a reinsurance company that is expected to mitigate large losses. This means that the capital adequacy ratio might be giving a false sense of security despite being high.

The model should be adjusted so that it can accommodate the other risk components that are not factored such as inflation risk, liquidity.

Further comparison should be carried out with a similar Risk Based Capital Framework of a similar market to Kenya's e.g. South Africa.

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