ACTUARIAL SOCIETY OF SOUTH AFRICA

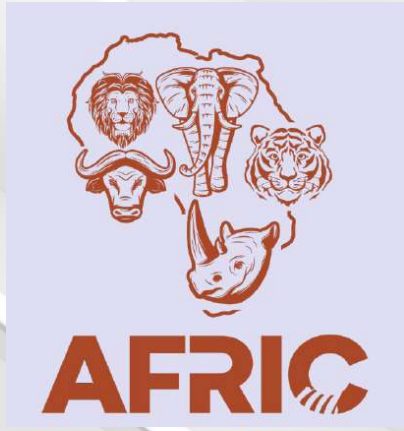
AFRIC

THE CONTRIBUTION OF SA INSURERS TO SYSTEMIC RISK

A Framework for Identification and Classification

Rob Rusconi

KEY MESSAGES



1. Research context and summary
2. The rationale for regulating financial markets
3. The contribution of insurance to economic and social development
4. Insurer contributions to systemic risk
5. Prudential regulation of insurers
6. South African regulatory model
7. Framework for classifying sources of systemic risk
8. Further research

1. RESEARCH CONTEXT AND SUMMARY

PART OF A WIDER STUDY OF FINANCIAL-SECTOR SYSTEMIC RISK

Insurance appears

- **to play a part in contributing to economic and social development**
- **to contribute materially to systemic risk**

Regulators and supervisors should be aware that

- those aspects of insurance that contribute to systemic risk may be identifiable
- existing technical approaches to risk modelling focus on idiosyncratic risk
- these are not appropriate for identifying systemic risk and may actually contribute to the development of such risk
- identifying sources of systemic risk calls for a specific focus

References identified on these slides are listed in Rusconi (2020), 'The contribution of South Africa's insurers to systemic risk: thoughts for policymakers', SAAJ 20, 149-210 and Rusconi (forthcoming), 'The Contribution of Insurers to Systemic Risk: A practical framework for regulators', SAAJ

2. RATIONALE FOR REGULATING FINANCIAL MARKETS

FINANCIAL MARKETS PLAY CRITICAL ROLES IN THE ECONOMIES SERVED

Among the roles played are:

- facilitating payments for the exchange of goods and services
- pricing, pooling, managing and transferring risk
- pooling or mobilising resources for capital expenditure and infrastructural- or social development
- mobilising savings and financial liquidity, and
- facilitating trade in goods or services between countries and regions.

CFRNZ (undated); Fohlin (2014); Merton (1995); OECD (2010) and World Bank (2012)

2. RATIONALE FOR REGULATING FINANCIAL MARKETS

FINANCIAL MARKETS PLAY CRITICAL ROLES IN THE ECONOMIES SERVED

They are increasingly integrated, potentially contributing to instability

"[…] a complex adaptive system[…] robust and fragile[…] progressively more complex and less diverse"

Andrew Haldane, Bank of England Director of Financial Stability, speech delivered at the Financial Student Association, Amsterdam, April 2009, page 3

ADB (2017); Bisias et al (2012); Fell & Schinasi (2005); Oosterloo & Ham (2003); Schmukler (2004); Smaga (2014); Winkler (1998)

2. RATIONALE FOR REGULATING FINANCIAL MARKETS

FINANCIAL MARKETS PLAY CRITICAL ROLES IN THE ECONOMIES SERVED

They are increasingly integrated, potentially contributing to instability

They take on a number of forms but are complex, global in reach and intertwined

CFRNZ (undated); Detzer (2014); ECB (2012); Erskine (2014); Fohlin (2014); Merton (1995); OECD(2010); Tagoe (2016); Vitols, (2001); World Bank (2012)

2. RATIONALE FOR REGULATING FINANCIAL MARKETS

FINANCIAL MARKETS PLAY CRITICAL ROLES IN THE ECONOMIES SERVED

They are increasingly integrated, potentially contributing to instability

They take on a number of forms but are complex, global in reach and intertwined

Financial markets cause substantial (not easily quantified) damage when they fail

Coates (2015), Cochrane (2014); Posner & Weyl (2013b); Reinhart & Rogoff (2008 & 2011)

2. RATIONALE FOR REGULATING FINANCIAL MARKETS

FINANCIAL MARKETS PLAY CRITICAL ROLES IN THE ECONOMIES SERVED

They are increasingly integrated, potentially contributing to instability

They take on a number of forms but are complex, global in reach and intertwined

Financial markets cause substantial (not easily quantified) damage when they fail

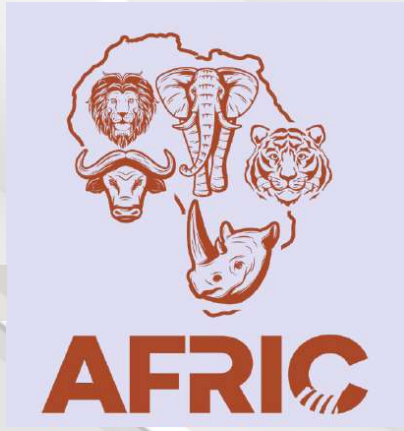
These failures (or imperfections) can have a range of forms and consequences

These include:

- information inequity
- market-power imbalances
- principal-agency conflict
- externalities

Barr & Diamond (2006); Brunnermeier et al (2009); Carvajal et al (2009); CFRNZ (undated); De la Dehesa (2010); FCA (2013); Gintis (2009); Grochulski & Morrison (2014); Healy & Palepu (2001); IMF (2013, 2014b and 2018); Khwaja & Mian (2011); Laffont & Martimort (2002); OECD (2010); Parker, (2002)

2. RATIONALE FOR REGULATING FINANCIAL MARKETS



FINANCIAL MARKETS PLAY CRITICAL ROLES IN THE ECONOMIES SERVED

They are increasingly integrated, potentially contributing to instability

They take on a number of forms but are complex, global in reach and intertwined

Financial markets cause substantial (not easily quantified) damage when they fail

These failures (or imperfections) can have a range of forms and consequences

And the possibility of regulatory failure should not be excluded

Acharya et al (2011); Australian Government (2014); Bisias et al (2012); Cochrane (2014); Falkena et al, (2001); FCA (2013); Gillingham and Sweeney (2010); Kim (2011); Ötker-Robe et al (2011); Parker (2002); Weiß et al (2014); Winston (2006)

2. RATIONALE FOR REGULATING FINANCIAL MARKETS

FINANCIAL MARKETS PLAY CRITICAL ROLES IN THE ECONOMIES SERVED

They are increasingly integrated, potentially contributing to instability

They take on a number of forms but are complex, global in reach and intertwined

Financial markets cause substantial (not easily quantified) damage when they fail

These failures (or imperfections) can have a range of forms and consequences

And the possibility of regulatory failure should not be excluded

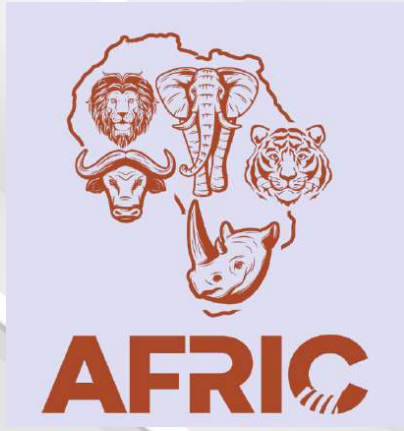
Regulation is typically justified on efforts to correct market failures

This calls for:

- a sound understanding of potential failures, and
- clearly defined objectives

APRA (2014); Australian Government (1997); Baldwin & Black (2016); Black (2012 and 2013); Black & Baldwin (2010); Cochrane (2014); Falkena et al (2001); Feasibility (2010); FSA (2006 and 2012); Knot (2014); Llewellyn (1999); Murray et al (2017); OECD (2010); NTSA (2011a and 2011b); Schwarcz (2019); Zerbe & McCurdy (2000)

KEY MESSAGES



1. Research context and summary
2. The rationale for regulating financial markets
3. The contribution of insurance to economic and social development
4. Insurer contributions to systemic risk
5. Prudential regulation of insurers
6. South African regulatory model
7. Framework for classifying sources of systemic risk
8. Further research

3. THE CONTRIBUTION OF INSURANCE TO DEVELOPMENT

INSURANCE CONTRIBUTES TO ECONOMIC AND SOCIAL DEVELOPMENT

"A sound national insurance and reinsurance market is an essential characteristic of economic growth."

United Nations Conference on Trade and Development (UNCTAD, 1964:55)

3. THE CONTRIBUTION OF INSURANCE TO DEVELOPMENT

INSURANCE CONTRIBUTES TO ECONOMIC AND SOCIAL DEVELOPMENT

Insurance theoretically benefits society in a number of ways

Insurance contributes as follows:

- accepts and transfers risk
- promotes the effective management of risk
- mobilises and allocates saving
- helps to develop markets for credit
- contributes to the development of capital markets
- intermediates between economic actors through various mechanisms
- substitutes or complements government efforts to establish effective social protection mechanisms

Bajar & Rajeev (2015); Borensztein et al (2017); Cai et al (2015); Cai (2016); Carter & Barrett (2006); Chamberlain et al (2017); Chatterjee & Turnovsky (2012); Clarke et al (2017); Cole et al (2013); Deblon & Loewe (2012); Dercon & Christiaensen (2007); Dickinson (1998); Guochen & Chi Wei (2012); Jacquier et al (2008); Janzen & Carter (2018); Karlan et al (2014); Kugler & Ofoghi (2005); Outreville (2013); Radermacher et al (2012); Skipper (1997); Thom et al (2019); UNCTAD (2015); UNEPFI (2014)

3. THE CONTRIBUTION OF INSURANCE TO DEVELOPMENT

INSURANCE CONTRIBUTES TO ECONOMIC AND SOCIAL DEVELOPMENT

Insurance theoretically benefits society in a number of ways

Evidence of causal link between insurance and economic growth is not clear

"There is no universally held view of the nature of causality between insurance market activities and economic growth."

Pradhan et al (2017:18)

3. THE CONTRIBUTION OF INSURANCE TO DEVELOPMENT

INSURANCE CONTRIBUTES TO ECONOMIC AND SOCIAL DEVELOPMENT

Insurance theoretically benefits society in a number of ways

Evidence of causal link between insurance and economic growth is not clear

Four types of relationship are typically sought:

- supply-leading hypothesis: causality runs from insurance markets to economic growth
- demand-following hypothesis: economic growth stimulates the development of insurance markets
- feedback hypothesis: growth and insurance stimulate one another
- neutrality hypothesis: no causal relationship between economic growth and insurance markets

Pradhan et al (2017)

3. THE CONTRIBUTION OF INSURANCE TO DEVELOPMENT

INSURANCE CONTRIBUTES TO ECONOMIC AND SOCIAL DEVELOPMENT

Insurance theoretically benefits society in a number of ways

Evidence of causal link between insurance and economic growth is not clear

A number of studies have been undertaken over some time:

- appearance of insurance leading to economic growth in India, China, Emerging Europe and Sweden
- studies of OECD countries suggest limited or temporary relationship
- exploration of differences between developed and developing countries produce mixed results
- some evidence of the link is found in African countries, but not with consistency

Adams et al (2008); Akinlo & Apanisile (2014); Arena (2008); Chang et al (2014); Dash et al (2018); Din et al (2017); Enz (2010); Garcia (2012); Ghosh (2013); Guochen & Chi Wei (2012); Haiss & Sümegi (2008); Han et al (2010); Li et al (2007); Ndalu (2016); Olayungbo (2015); Olayungbo & Akinlo (2016); Outreville (2013); Peleckienė et al (2019); Pradhan et al (2015, 2016 and 2017); Ramoutar (2020); Richterková and Koráb (2013); Sibindi & Godi (2014); Stojaković & Jeremić (2016); Tien & Yang (2014); Verma & Bala (2013); Webb et al (2002); Ward & Zurbruegg (2000); Yinusa & Akinlo (2013)

3. THE CONTRIBUTION OF INSURANCE TO DEVELOPMENT

INSURANCE CONTRIBUTES TO ECONOMIC AND SOCIAL DEVELOPMENT

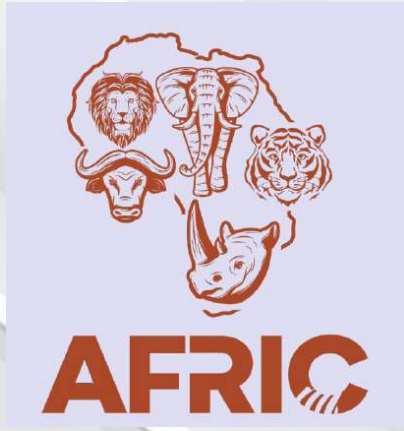
Insurance theoretically benefits society in a number of ways

Evidence of causal link between insurance and economic growth is not clear

Concluding comments:

- theoretical case suggests a contribution primarily through risk management, financial intermediation and the development of capital markets
- broad empirical evidence exists for cointegration of insurance markets and economic growth, but demonstrating causality is more difficult
- on balance the case for the contribution to economic and social development appears reasonable

KEY MESSAGES



1. Research context and summary
2. The rationale for regulating financial markets
3. The contribution of insurance to economic and social development
4. Insurer contributions to systemic risk
5. Prudential regulation of insurers
6. South African regulatory model
7. Framework for classifying sources of systemic risk
8. Further research

4. SYSTEMIC RISK

INSURANCE MAY CONTRIBUTE MATERIALLY TO SYSTEMIC RISK

What is systemic risk?

"One possibility is simply to concede that systemic risk is not something that is amenable to quantification. Instead it is something that becomes self evident under casual observation."

Lars Peter Hansen (2013:1)

4. SYSTEMIC RISK

INSURANCE MAY CONTRIBUTE MATERIALLY TO SYSTEMIC RISK

What is systemic risk?

Researchers have considered systemic risk with reference to a number of attributes:

- widespread adverse impacts on the financial sector, typically based on pre-conditions of extensive market interdependence
- externalities or market failure of some form
- a significant loss of confidence resulting in a loss in economic value
- severe and widespread impairment of financial-sector entities, often with spill-over into the real economy

Acharya et al (2017); Bisias et al (2012); Cerra & Saxena (2017); Cummins & Weiss (2014); De Bandt & Hartmann (2000); Eling & Pankoke (2016); Geneva Association (2010b); Georg (2011); Group of Ten (2001); Harrington (2009); Kessler (2014); Nier et al (2007); Safa et al (2013); Weiß & Mühlnickel (2014)

4. SYSTEMIC RISK

INSURANCE MAY CONTRIBUTE MATERIALLY TO SYSTEMIC RISK

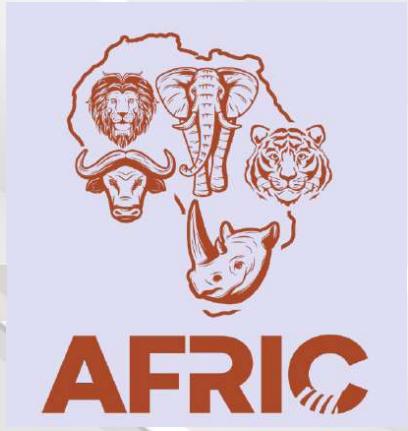
What is systemic risk?

The sources of systemic risk may be classified in a number of ways, one of which might be:

- contagion attributable to the inopportune sale of assets
- contagion caused by counterparty defaults
- contagion due to opaque information about institutions provoking conservative unwillingness to engage financially with parties
- irrational contagion triggering a withdrawal of funds from institutions regardless of their financial strength

Allen & Gu (2018); De Bandt & Hartmann (1999); Harrington (2009); Nier et al (2007)

4. SYSTEMIC RISK



INSURANCE MAY CONTRIBUTE MATERIALLY TO SYSTEMIC RISK

What is systemic risk?

Are regulators effectively mitigating or managing systemic risk?

"Existing policies appear adequate to contain individual firm and systemic risks both now and in the intermediate term."

Group of Ten (2001: 7 and 18)

4. SYSTEMIC RISK

INSURANCE MAY CONTRIBUTE MATERIALLY TO SYSTEMIC RISK

What is systemic risk?

Are regulators effectively mitigating or managing systemic risk?

Consider the special labelling and treatment of the SIFIs and G-SIIs:

- appears to provide a free lunch of lower funding costs to SIFIs
- some insurers, in contrast, have been scrambling to avoid identification as a G-SII
- evidence of reducing contributions to systemic risk was found
- but flaws in the allocation of insurers to the G-SIIs group were also identified

Araten & Turner (2013); Boyd & Heitz (2016); Chen & Sun (2019); Fung & Yeh (2018); Jobst (2014); Kim (2011); Moenninghoff et al (2015); Ötker-Robe et al (2011); Ueda & Di Mauro (2013); Weiß & Mühlnickel (2014)

4. SYSTEMIC RISK

INSURANCE MAY CONTRIBUTE MATERIALLY TO SYSTEMIC RISK

What is systemic risk?

Are regulators effectively mitigating or managing systemic risk?

Questions remain about the effectiveness of the framework in place:

- harmony underpinning Basel (and Solvency II) may be contributing to herding
- regulatory approaches to increasing market complexity appear to be inadequate
- the possibility of regulatory capture cannot be ruled out

May & Arinaminpathy (2010); Schwarcz & Schwarcz (2014); Smaga (2014); Weber (2010, 2011 and 2012)

4. SYSTEMIC RISK

INSURANCE MAY CONTRIBUTE MATERIALLY TO SYSTEMIC RISK

What is systemic risk?

Are regulators effectively mitigating or managing systemic risk?

What of the insurer contribution to systemic risk

The following may be stated in summary:

- banks generally contribute more to systemic risk than insurers
- insurers typically retain risks on balance sheet and outsource through a structure characterised by hierarchy rather than peer support

Baluch et al (2011); Bierth et al (2015), Benoit et al (2017), Bobtcheff et al (2016); Chen & Sun (2019); Eling & Pankoke (2016); Elyasiani et al (2015); Hauton & Héam (2015); Kanno (2016); Kaserer & Klein (2019); Kessler (2014); Van Lelyveld et al (2011)

4. SYSTEMIC RISK

INSURANCE MAY CONTRIBUTE MATERIALLY TO SYSTEMIC RISK

What is systemic risk?

Are regulators effectively mitigating or managing systemic risk?

What of the insurer contribution to systemic risk

Under what conditions are insurer contributions to systemic risk significant?

The insurer contribution to systemic is generally more significant when:

- insurers form part of financial groups or have strong bancassurance alliances
- insurers operate outside of core insurance activities
- insurance sub-markets are more concentrated
- policyholder behaviour, linked to economic circumstances, adversely impacts insurers
- insurers act in concert

Baluch et al (2011); Barsotti et al (2016); Bierth et al (2015); Bobtcheff et al (2016); Cummins & Weiss (2014); Eling & Pankoke (2016); Geneva Association (2010b); Hauton & Héam, 2015; Kanno (2016); Koijen & Yogo (2017); Rudolph (2017); Russell et al (2013); Schwarcz & Schwarcz (2014)Van Lelyveld et al (2011); Weiß & Mühlnickel (2014)

4. SYSTEMIC RISK

INSURANCE MAY CONTRIBUTE MATERIALLY TO SYSTEMIC RISK

What is systemic risk?

Are regulators effectively mitigating or managing systemic risk?

What of the insurer contribution to systemic risk

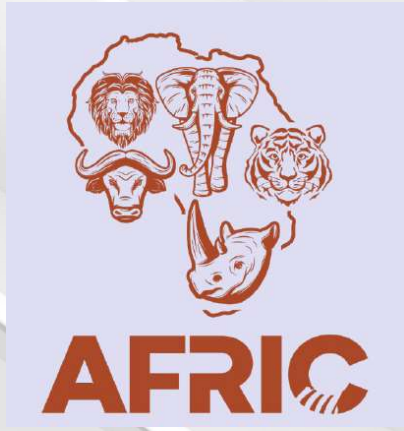
Under what conditions are insurer contributions to systemic risk significant?

Researchers have made several proposals to regulators:

- identify and mitigate potential market failures in insurance
- focus on the resilience of the network, not just on the financial robustness of regulated entities
- consider the potential for the activities in which insurers engage to contribute to systemic risk
- in the interests of better-informed customers and stronger competitive dynamics, enhance
  - market conduct
  - the transparency of market activity
  - the alignment of incentives
- consider limits on certain market activities or taxes on those that might contribute to systemic risk

Ho et al (2013); Hufeld et al (2017); Kaserer & Klein (2019); Klein (2012b); Koijen & Yogo (2017)

KEY MESSAGES



1. Research context and summary
2. The rationale for regulating financial markets
3. The contribution of insurance to economic and social development
4. Insurer contributions to systemic risk
5. Prudential regulation of insurers
6. South African regulatory model
7. Framework for classifying sources of systemic risk
8. Further research

5. PRUDENTIAL REGULATION OF INSURERS

SOLVENCY II HAS BEEN THOROUGHLY EVALUATED

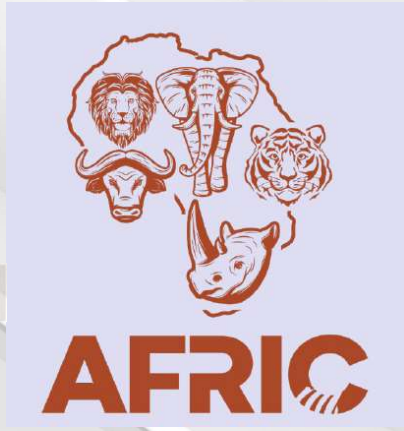
Europe's Solvency II approach is establishing itself as the global standard

Key attributes of the methodology:

- developed over a number of years and still being modified
- based on rigorous management of risks by insurers
  - risk quantification
  - risk management
  - disclosure
- established on regulatory principles rather than rules

DNB (2016); Elderfield (2009); IAIS (2018); NTSA (2011a); Steffen (2008)

5. PRUDENTIAL REGULATION OF INSURERS



SOLVENCY II HAS BEEN THOROUGHLY EVALUATED

Europe's Solvency II approach is establishing itself as the global standard

Regarded as an improvement on its predecessors and many of its peers

Cummins (1993); Doff (2008 and 2016); Eling & Holzmüller (2008); Holzmüller (2009); Klein (2012a); Liu et al (2019); Rae et al (2017)

5. PRUDENTIAL REGULATION OF INSURERS

SOLVENCY II HAS BEEN THOROUGHLY EVALUATED

Europe's Solvency II approach is establishing itself as the global standard

Regarded as an improvement on its predecessors and many of its peers

Subject to criticism in a number of respects

Some of these include:

- costs of implementation may raise barriers to entry, undermining the benefit of the approach
- undue complexity adds to cost and to risks of arbitrage and supervisory ineffectiveness
- inconsistency with Basel requirements and variations in outcomes across countries
- risks associated with the use of internal models
- call for review of several technical aspects of the SCR calculation
- need for greater emphasis on appropriate governance and improved market transparency

Casarano et al (2017); Cerchiara & Demarco (2016); Christiansen & Niemeyer (2014); Foroughi (2012); Frölich & Weng (2015 and 2018); Eling et al (2007); Eling & Holzmüller (2008); Gatzert & Wesker (2012); Laas & Siegel (2017); Liu et al (2019); Martin (2013); Swarup (2012)

5. PRUDENTIAL REGULATION OF INSURERS

SOLVENCY II HAS BEEN THOROUGHLY EVALUATED

Europe's Solvency II approach is establishing itself as the global standard

Regarded as an improvement on its predecessors and many of its peers

Subject to criticism in a number of respects

More important, to this study, it has been criticised for inadequate attention to systemic risk:

- the uniformity of the solvency framework incentivises behavioural herding
- technical aspects of the calculation contribute to systemic risk

Al-Darwish et al (2011); Barth (2000); Boonen (2017); Eling & Holzmüller (2008); Floreani (2013); Rae et al (2017); Swarup (2012); Wagner (2014)

5. PRUDENTIAL REGULATION OF INSURERS

SOLVENCY II HAS BEEN THOROUGHLY EVALUATED

Europe's Solvency II approach is establishing itself as the global standard

Regarded as an improvement on its predecessors and many of its peers

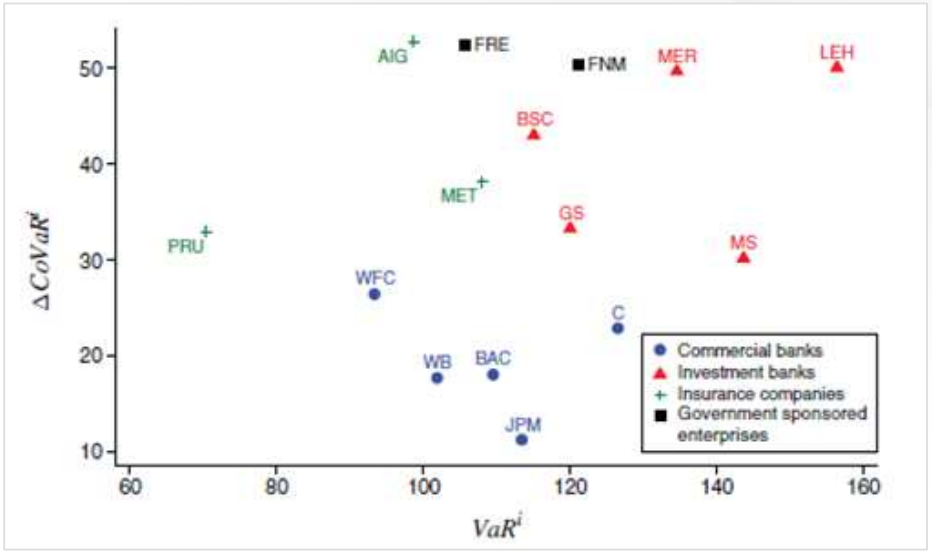
Subject to criticism in a number of respects

More important, to this study, it has been criticised for inadequate attention to systemic risk:

- the uniformity of the solvency framework incentivises behavioural herding
- technical aspects of the calculation contribute to systemic risk
- value-at-risk (VaR) not only ignores tail risk but it focuses on idiosyncratic risk
- a number of alternatives to VaR have been explored and tested, ΔCoVaR, for example

Acharya (2009); Acharya et al (2012 and 2017); Adams et al (2014); Allen & Carletti (2006); Brownlees & Engle (2017); Bui et al (2017); Checkley (2009); Fong et al (2011); Gauthier et al (2012); Giglio (2016); Hautsch et al (2015); Huang et al (2012); Ibragimov et al (2011); Leukes & Mensah (2019); Sedunov (2016); Segoviano & Goodhart (2009); Wagner (2010); Zhang et al (2015)

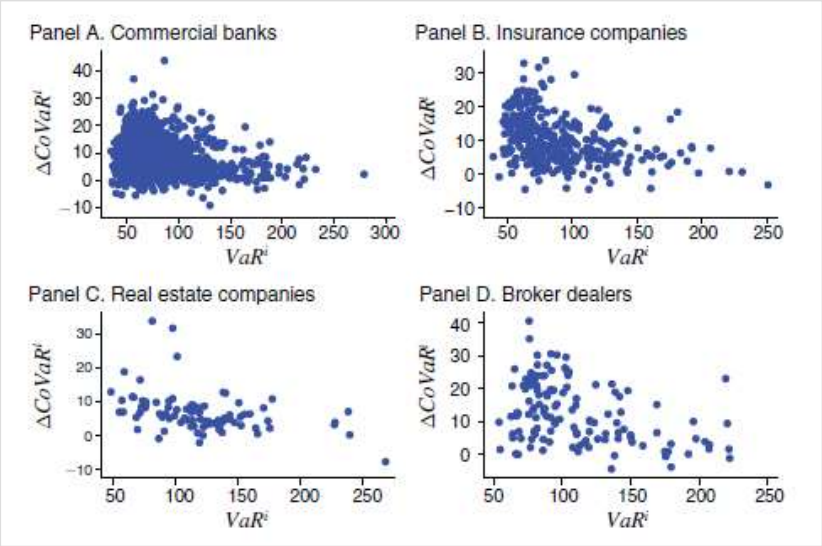
5. PRUDENTIAL REGULATION OF INSURERS



ΔCoVaR does not produce results consistently similar to the VaR alternative in use

Adrian & Brunnermeier (2016: 1707) Note: measures are based on 2006 4th quarter data and reported in quarterly percent returns at the 99% significance level for merger-adjusted entities

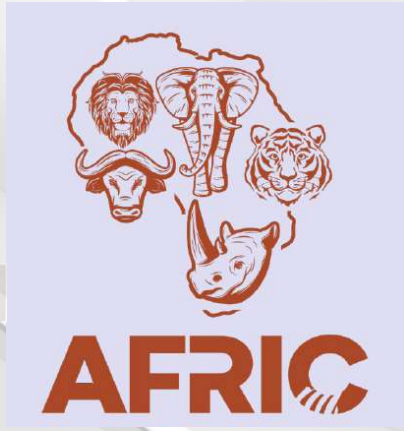
5. PRUDENTIAL REGULATION OF INSURERS



ΔCoVaR does not produce results consistently similar to the VaR alternative in use

Adrian & Brunnermeier (2016: 1722) Note: scatter-plots show time-series averages of the portfolio risk in isolation (VaR) and the contribution to systemic risk (ΔCoVaR), in units of quarterly percent of total market equity loss rates at the 95th significance level

5. PRUDENTIAL REGULATION OF INSURERS



SOLVENCY II HAS BEEN THOROUGHLY EVALUATED

Europe's Solvency II approach is establishing itself as the global standard

Regarded as an improvement on its predecessors and many of its peers

Subject to criticism in a number of respects

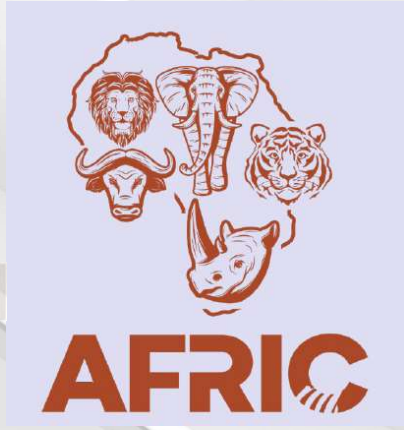
The real concern: diversification pursued by entities contributes to systemic risk

"While it is true that diversification reduces an institution's overall likelihood of failing, it also increases its inclination to fail at the same time as other institutions. Since externalities are typically associated with systemic failures rather than isolated institutional failures, our analysis suggests that there is hence a rationale for discouraging diversification."

Wagner (2010: 374)

Acharya (2009); Allen & Carletti (2006); Checkley (2009); Ibragimov et al (2011); Wagner (2010)

5. PRUDENTIAL REGULATION OF INSURERS



SOLVENCY II HAS BEEN THOROUGHLY EVALUATED

Europe's Solvency II approach is establishing itself as the global standard

Regarded as an improvement on its predecessors and many of its peers

Subject to criticism in a number of respects

The real concern: diversification pursued by entities contributes to systemic risk

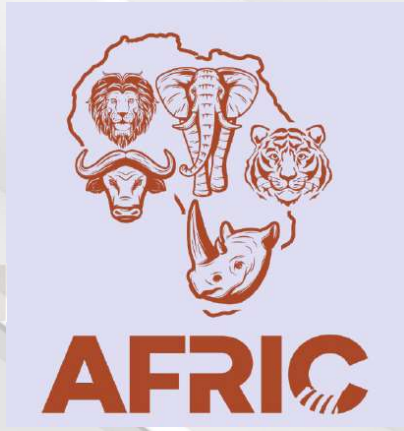
The problem has been recognised by the European Insurance & Occupational Pensions Authority (EIOPA)

Options identified for addressing the problem:

- capital surcharge for systemic risk
- concentration thresholds
- expansion of the prudent person principle

EIOPA (2019a and 2019b); ESRB (2018 and 2020)

5. PRUDENTIAL REGULATION OF INSURERS



SOLVENCY II HAS BEEN THOROUGHLY EVALUATED

Europe's Solvency II approach is establishing itself as the global standard

Regarded as an improvement on its predecessors and many of its peers

Subject to criticism in a number of respects

The real concern: diversification pursued by entities contributes to systemic risk

The problem has been recognised by EIOPA

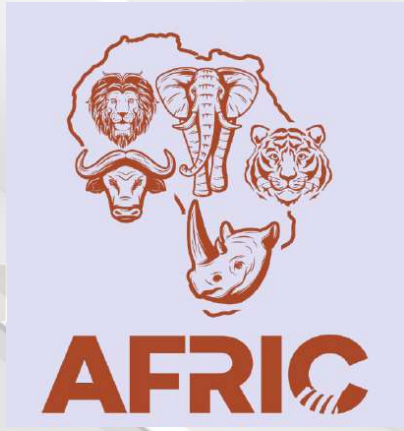
South Africa's insurance market is large and sophisticated, but concentrated

The IMF has:

- commended the improving regulatory framework, but called for
- more attention to liquidity risk, and
- a stronger approach in mitigation of systemic risk

IMF (2008, 2014a, 2015a, 2015b and 2015c); PA (2019)

5. PRUDENTIAL REGULATION OF INSURERS



SOLVENCY II HAS BEEN THOROUGHLY EVALUATED

Europe's Solvency II approach is establishing itself as the global standard

Regarded as an improvement on its predecessors and many of its peers

Subject to criticism in a number of respects

The real concern: diversification pursued by entities contributes to systemic risk

The problem has been recognised by EIOPA

South Africa's insurance market is large and sophisticated, but concentrated

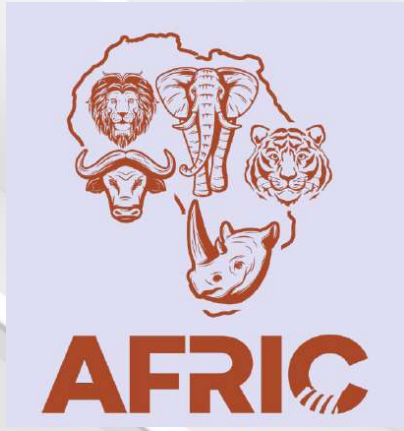
Prudential regulation of insurers is based on the Solvency II model

Under the South African approach:

- insurers may use internal models
- methodology broadly consistent with IFRS
- sovereign debt is considered risk free
- public disclosure requirements are weaker

NTSA (2011a and 2013b); PA (2018); SARB (2017a and 2017b)

KEY MESSAGES



1. Research context and summary
2. The rationale for regulating financial markets
3. The contribution of insurance to economic and social development
4. Insurer contributions to systemic risk
5. Prudential regulation of insurers
6. South African regulatory model
7. Framework for classifying sources of systemic risk
8. Further research

6. SOUTH AFRICAN REGULATORY MODEL

SA INSURANCE REGULATORS SHOULD GIVE ATTENTION TO SYSTEMIC RISK

South Africa has a similarly strong rationale for regulating insurers

6. SOUTH AFRICAN REGULATORY MODEL

SA INSURANCE REGULATORS SHOULD GIVE ATTENTION TO SYSTEMIC RISK

South Africa has a similarly strong rationale for regulating insurers

Policymakers already focus on improving the economic and social contributions of insurance

FMT (2015 and 2018); FSCA (2018); NTSA (2011a)

6. SOUTH AFRICAN REGULATORY MODEL

SA INSURANCE REGULATORS SHOULD GIVE ATTENTION TO SYSTEMIC RISK

South Africa has a similarly strong rationale for regulating insurers

Policymakers already focus on improving the economic and social contributions of insurance

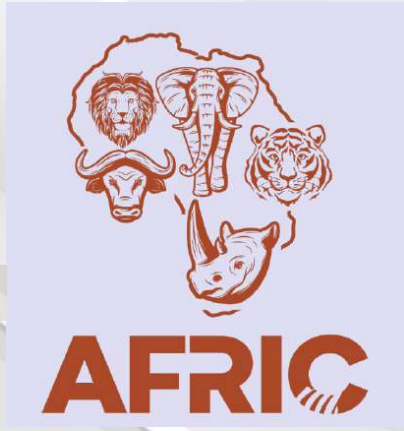
Evidence for and against a contribution to systemic risk exists

Against the position that SA insurers contribute meaningfully to systemic risk, they have:

- a long history of careful prudential management
- low involvement in non-traditional non-insurance activity
- shared significant investment risk with their policyholders
- been subject to recent improvements in risk-management requirements
- been required to meet incremental improvements in their quality of reporting

Insurers are less likely than other financial institutions to contribute materially to systemic risk

6. SOUTH AFRICAN REGULATORY MODEL



SA INSURANCE REGULATORS SHOULD GIVE ATTENTION TO SYSTEMIC RISK

South Africa has a similarly strong rationale for regulating insurers

Policymakers already focus on improving the economic and social contributions of insurance

Evidence for and against a contribution to systemic risk exists

In favour of the position that SA insurers contribute meaningfully to systemic risk:

- industry concentration levels are high
- relationships with other financial-sector providers, especially banks, are close
- assets are likely to be characterised by significant overlap, driving up correlated exposures
- solvency exposure is highly correlated through bond yields
- liabilities across insurers show similar attributes, as products do not materially differ
- exposure to the economic cycle and to the corresponding behaviour of policyholders is not immaterial

Operational risk, liquidity risk and the exposure to zero-rated bond yields could be added to this list

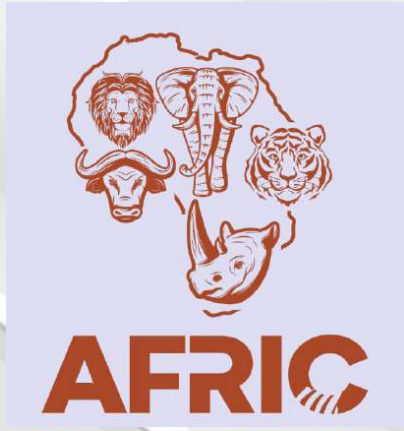
6. SOUTH AFRICAN REGULATORY MODEL

SA INSURANCE REGULATORS SHOULD GIVE ATTENTION TO SYSTEMIC RISK

Regulatory options for further consideration:

- Careful consideration of the sources of systemic risk among insurers
- Attention to the possibility of correlated assets and liabilities, through common activities
- An explicit requirement on insurers that they consider their contribution to systemic risk
- More careful attention to model risk and to the potential for flaws in the standard approach to SCR
  - correlation between market risk and underwriting risk
  - alternative treatment of government (and other) bonds
  - ongoing development of the regulatory skill set
- Consideration of the potential for the propagation of risks within and between financial groups
- Treatment of risks that do not lend themselves appropriately to actuarial modelling
- Options for improving organisational transparency
- A sound approach to systemic risk that takes into account the attributes of individual entities

KEY MESSAGES



1. Research context and summary
2. The rationale for regulating financial markets
3. The contribution of insurance to economic and social development
4. Insurer contributions to systemic risk
5. Prudential regulation of insurers
6. South African regulatory model
7. Framework for classifying sources of systemic risk
8. Further research

7. CLASSIFYING SOURCES OF SYSTEMIC RISK

EFFORTS TO CLASSIFY SOURCES OF SYSTEMIC RISK

Two main sources of classification

- EIOPA proposes:
  - a direct, entity-based contribution (identified through micro-prudential methods), or
  - an indirect, activity-based (e.g. financial guarantees) or behaviour-based (e.g. imprudent risk taking) contributions
- IAIS recommends distinguishing between:
  - insurance sources of systemic risk (e.g. liquidity risk) , and
  - insurance channels through which systemic risk may be propagated (e.g. holdings in other entities)

Difficult to allocate all identified risks to either of these frameworks

EIOPA (2017); IAIS (2019)

7. CLASSIFYING SOURCES OF SYSTEMIC RISK

EFFORTS TO CLASSIFY SOURCES OF SYSTEMIC RISK

Developed a bespoke approach to fit with existing regulatory frameworks:

- Assets
- Liabilities
- Asset-liability management
- Solvency
- General

EIOPA (2017); IAIS (2019)

7. CLASSIFYING SOURCES OF SYSTEMIC RISK

EFFORTS TO CLASSIFY SOURCES OF SYSTEMIC RISK

Expanded to aid classification:

	Concentration	Mismatch	Quality	Strategic	Operational
Assets	✓		✓		
Liabilities	✓	✓	✓	✓	✓
ALM		✓	✓	✓	
Solvency	✓	✓	✓	✓	✓
General					

EIOPA (2017); IAIS (2019)

7. CLASSIFYING SOURCES OF SYSTEMIC RISK

EFFORTS TO CLASSIFY SOURCES OF SYSTEMIC RISK

Filled with identified examples (selection):

- Assets: concentration
  - Economic, policy and governance impact on assets
  - Impacts of climate change on asset values
  - Interconnected stock market performance
  - Investment in banks and the real economy on direct banking activities
- Assets: quality
  - Counterparty exposures
  - Investment through unregulated subsidiaries
  - Non-traditional investment activities
  - Complex structured securities, CDSs and others

EIOPA (2017); IAIS (2019)

7. CLASSIFYING SOURCES OF SYSTEMIC RISK

EFFORTS TO CLASSIFY SOURCES OF SYSTEMIC RISK

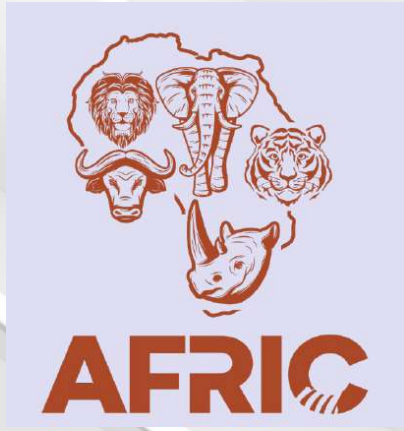
Assessed against publicly-available insurer information:

- Annual reports, life and non-life insurers
- Last five years
- Capturing the largest five life and non-life insurers
- Assessing at group and insurance level

EIOPA (2017); IAIS (2019)

Balance sheet element	Risk type	Risk form	SARB	Total	Grp	LTI	STI	Group A			B			C	D	E	F			G	Mitigation
								Grp	LTI	STI	Grp	LTI	STI	LTI	Grp	Grp	Grp	LTI	STI	STI	
Assets	**Concentration**	Economic, policy and governance impacts on assets		9	5	2	2														
		Impacts of climate change on asset values		3	3																Scrutiny of impacts and potential concentration of risk
		Interconnected stock market performance		1	1																Stress tests and capital buffers
		Investment in banks and the real economy or direct banking business		4	3	1															
	Quality	Counterparty exposures		10	4	3	3														
		Investment through unregulated subsidiaries																			**Regulatory scrutiny and focus on group risk**
		Non-traditional investment activities																			**Regulatory analytics and detailed probes**
		Complex structured securities, CDSs and others		2	2																Analysis of derivative holdings and their purpose
Liabilities	**Concentration**	Catastrophe risk		9	3	3	3														
		Impacts on climate change on liabilities		5	4		1														
		Correlated product classes		4		2	2														
		Limited substitutability and capacity: general																			**Concentration studies and care over barriers to entry**
		Substitutability limitations: class-specific concerns																			**Focused market-sector analysis**
		Exposure to social issues and the broader economy		9	5	1	3														
		Insurer concentration and interconnectedness		2	1	1															Concentration and interdependency studies
		Reinsurance with limited risk transfer		2		1	1														Registration of financial reinsurance schemes, with monitoring
	Mismatch	Products with guarantees and embedded options		6	3	3															
		Savings and investment in long-term insurance		5	1	4															
		Policyholder lapses and surrenders		8	3	4	1														
	Quality	Product complexity		1		1															Market conduct focus
		Bank-like product design																			**Product definition and control measures**
	Strategic	Distribution through banks		3	1	1	1														
		Credit protection and economic exposure		12	5	3	4														
		Exposure to burden of disease and economic impacts		6	3	2	1														
		Exposure to fraudulent activity		1		1															Focus on operational risk management
		Insurer provides critical function with few substitutes																			**Class-by-class identification of potential for concentration**
		Third-party asset management																			**Minimum governance standards**
	Operational	Cyber risk		6	4	1	1														
ALM	**Mismatch**	Asset lending and associated liquidity risk		2	2																Standard regulatory reporting
		Liquidity risks attributable to constrained funding, asset volatility or derivative exposure		9	3	3	3														
		Reliance on short-term financing																			**Liquidity modelling and occasional focused studies**
		High exposure to equity investments		13	5	4	4														
		Maturity mismatches		2	2																Liquidity modelling and stress tests
		Economic exposure attributable to speculative derivatives																			**Liquidity modelling, regulatory disclosure and special studies**
	Quality	Counterparty exposure, particularly from reinsurance		11	4	4	3														
		Alternative risk transfer, banking, hedge fund and synthetic investments		4	2	1	1														
		Property management risk		7	3	3	1														
	Strategic	Business model risks and interconnectedness		1	1																Occasional focus on strategic risk management
		Non-core activities and unusual exposures		1	1																Systematic disclosure framework covering assets and liabilities
		Insurance-linked securities																			**Identification and assessment**
Solvency	**Concentration**	Risk exposures attributable to links with reinsurers		1	1																Reinsurer solvency and analysis of concentration risks
		Losses tranfered to other participants		1		1															Assessment of inward reinsurance arrangements
	Mismatch	Leverage		1		1															Microprudential tools and shock testing
	Quality	Funding structures		3	1	1	1														
	Strategic	Unduly rapid growth		1	1																Scenario testing and focus on identified insurers
	Operational	Inadequate pricing and provisioning		3		1	2														
		Operational liquidity risk and limited fungibility within groups		8	2	3	3														
General	**General**	Policy and regulation not geared towards reducing systemic risk		2	2																Increasing regulatory focus on systemic risk
		Panic run possible		1	1																Scenerio testing and care over product design
		Inadequate governance																			**Minimum standards at regulated entities**

KEY MESSAGES



1. Research context and summary
2. The rationale for regulating financial markets
3. The contribution of insurance to economic and social development
4. Insurer contributions to systemic risk
5. Prudential regulation of insurers
6. South African regulatory model
7. Framework for classifying sources of systemic risk
8. Further research

8. FURTHER RESEARCH

FURTHER RESEARCH MAY BE BENEFICIAL IN A NUMBER OF AREAS

The following may be considered:

- Financial market networks
- The economic and social benefits of insurance in South Africa
- Empirical tests of the insurance industry
  - options for determining individual entity contributions to systemic risk
  - exploration of the nature of assets and liabilities, across insurers and across groups
  - consideration of a graduated regulatory approach that takes into account entity characteristics
- More detailed assessment of insurance risk
- Contributions to strengthen the regulatory framework
  - reconsideration of objectives
  - options for an integrated approach to macroprudential regulation
  - a better articulated approach to Regulatory Impact Analysis

THE CONTRIBUTION OF SA INSURERS TO SYSTEMIC RISK

A Framework for Identification and Classification

Rob Rusconi