

## Publisher Page

The theme of the current issue of the journal is 'Reinsurance: It's evolution and role in the Indian context', with several articles on various aspects of the important subject.

The Reinsurance landscape in India is undergoing a series of important changes particularly after the passage of the Insurance Laws (Amendment) Act, 2015, that facilitated the entry of major global reinsurers into the Indian market through their branches. Since then, nine Foreign Reinsurance Branches (FRBs) and two service companies under Lloyd's India have opened offices in India.

India being recognized as the fastest growing large economy, the insurance market in India is poised for excellent growth in the coming decade. Significant mortality/property/health insurance protection gaps, demand for technology based customized insurance covers, increasing cyber security concerns and increasing incidence of catastrophic events arising out of climate risks are some of the current challenges faced by Indian insurers. In this context, the reinsurers are expected to extend their technical and financial capabilities to Indian insurers in effectively addressing the situation.

After active consultations with all the stakeholders, regulatory framework applicable to reinsurance business is largely consolidated and updated by notification of IRDAI (Reinsurance) Regulations, 2018. The framework duly



recognizes the critical role played by Indian reinsurers, FRBs, entities operating out of the GIFT City and Cross Border Reinsurers in supporting Indian insurance market. With current Indian annual reinsurance premium of around Rs. 50,000 crore, there is decent scope of business for all. Changing dynamics of the market demand a highly motivated and professional work force equipped to handle various nuances of reinsurance business and therefore, capacity building in the sector needs necessary focus. The objective is to make India emerge as a reinsurance hub.

'To protect the interest of policyholders and to secure fair treatment to them' being the primary mission of IRDAI, '***Policyholder protection- The road traversed so far and the way forward***' will be the theme of the next issue of the Journal.

**Dr. Subhash C Khuntia**

# प्रकाशक की कलम से



जर्नल के प्रस्तुत अंक का विषय (थीम) पुनर्बीमाहै: भारतीय संदर्भ में उसके विकास और उसकी भूमिका पर तथा इस महत्वपूर्ण विषय के विभिन्न पहलुओं के संबंध में प्रकाश डालनेवाले कई आलेख इसमें हैं।

भारत में पुनर्बीमा के परिदृश्य में शंखलाबद्ध महत्वपूर्ण परिवर्तन हो रहे हैं, विशेष रूप से बीमा विधि (संशोधन) अधिनियम, 2015 के पारित होने के बाद, जिसने बड़े वैश्विक पुनर्बीमाकर्ताओं के लिए भारतीय बाजार में अपनी शाखाओं के माध्यम से प्रवेश को सुसाध्य बनाया है। तब से नौ विदेशी पुनर्बीमाकर्ताशाखाओं (एफआरबी) और लायड्स इंडिया के अंतर्गत दो सेवा कंपनियों ने भारत में कार्यालय खोले हैं।

भारत की पहचान सबसे बढ़ रही अर्थव्यवस्था के रूप में हो रही है तथा भारत में बीमा बाजार का आनेवाले दशक में उत्कृष्ट वृद्धि करना निश्चित है। उल्लेखनीय मृत्यु-दर / संपत्ति / स्वास्थ्य बीमा संरक्षण अंतराल, प्रौद्योगिकी आधारित आवश्यकतानुरूप बीमा कवरों के लिब माँग, बढ़ती हुई साइबर सुरक्षा के सरोकार एवं जलवायु जोखिमों से उत्पन्न होनेवालीआपातीघटनाओं का बढ़ता हुआ भारकुछ ऐसी वर्तमान चुनौतियाँ हैं जिनका सामना भारतीय बीमाकर्ता कर रहे हैं। इस संदर्भ में पुनर्बीमाकर्ताओं से प्रत्याशित है कि वे इस स्थिति का प्रभावी ढंग से समाधान करने में भारतीय बीमाकर्ताओं को अपनी तकनीकी और वित्तीय क्षमताएँ उहताएँ उपलब्ध कराएँ। सभी हितधारकों के साथ सक्रिय विचार-विमर्श करने के बाद, पुनर्बीमा व्यवसाय के लागू विनियामक ढाँचे को व्यापक तौर पर समेकित किया गया है तथा आईआरडीएआई (पुनर्बीमा) विनियम, 2018 के द्वारा इसे अद्यतन किया गया है। यह ढाँचा भारतीय पुनर्बीमाकर्ताओं, एफआरबी, गिफ्टसिटी से परिचालित

करनेवाली संस्थओं तथा भारतीय पुनर्बीमा बाजार को समर्थन देने में समुद्रपारपुनर्बीमाकर्ताओं द्वारा अदा की जानेवाली महत्वपूर्ण भूमिका की विधिवत पहचान करता है। लगभग ५०,००० करोड़ रुपये के वर्तमान भारतीय वार्षिक पुनर्बीमाप्रीमियम के होते हुए, सभी के लिए इस व्यवसाय की काफी अच्छी गुंजाइश है। बाजार का परिवर्तनशील मति-सिद्धांत पुनर्बीमा व्यवसाय के विभिन्न सूक्ष्म भेदों को संभालने के लिए सुसज्जित अत्यधिक उत्प्रेरित और व्यावसयिक कार्य-बल की माँग करता है तथा इस कारण से इस क्षेत्र में क्षमता निर्माण के लिए आवश्यक रूप से ध्यान केन्द्रित करने की आवश्यकता है। उद्देश्य भारत को एक पुनर्बीमा केन्द्र (हब) के रूप में उभरने में समर्थ बनाना है।

'पालिसीधारकों के हितों का संरक्षण करना तथाउनकेप्रति उचित व्यवहार सुनिश्चित करना' आईआरडीएआई का प्राथमिक मिशन वक्तव्य होते हुए, 'अब तक तय किया गया रास्ता और आगे का मार्ग' जर्नल के आगामी अंक का विषय होगा।

एस.सी. खुंटिया

Dr. Subhash C Khuntia

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## Reinsurance

In the classic book 'AGAINST THE GODS' the American Economist Peter Bernstein iterates that the revolutionary aspect which delineates the boundary between modern times and the past is *mastery of risk*. Insurance and reinsurance help in mastering of risk of any sorts by the modern societies. From the risks of launching of satellites in space through rockets to managing the financial losses in the aftermath of natural catastrophes such as earthquakes or protecting industries against man-made catastrophes such as terrorism etc., reinsurance not only helps insurers by providing financial capacity for sharing of risks but it also plays a pivotal role in world wide risk management.

The Insurance Laws (Amendment) Act 2015

permitted the establishment of branch offices in India by foreign companies engaged in reinsurance business (foreign reinsurer branches), expanding the scope and choice, for placement by Indian direct insurers. The IRDAI Re-Insurance Regulations 2018, were brought out with the objectives of maximizing retention within the country, developing technical and financial capacities of the insurance companies and also for simplifying the administration of business. Given today's highly competitive scenario in the insurance sector, an insurance company has to not only work on adequate pricing of its products but also on effective capital and risk management. Such being the central role played by the Reinsurance sector, the

current issue of IRDAI Journal is on the theme '*Reinsurance- its evolution and role in the Indian context*'.

Included under the CEO's corner is the article titled '*A World at risk - Underinsurance in India-*' by Mr. Sankar Garigiparthi, CEO, Lloyd's India, which discusses the plight of Underinsurance in India and about Insurance in India in the context of the report released by Lloyds viz. '*A world at risk*'. Mrs.Sunaayana in her article '*Relevance of Life Reinsurance in the current Indian context*' explains the various benefits and other value added services offered by the reinsurers to the life insurers in India and how the Life insurance industry by forging a healthy relation with the reinsurers can achieve a

higher reach. Mrs. P. Kalyani and Prof.S. Sreenivasa Murthy vide their research paper titled '*Factors influencing the Reinsurance demand in India- A study*' submitted their findings that firm size, underwriting risk, long tail business and return on assets of an insurer significantly influence its reinsurance demand. Mr.N.M. Behera in his article '*Reinsurance regulations- A step forward*' has given insights into the newly framed Reinsurance regulations and expressed that they are likely to have a positive impact on the sector in general along with spinoffs such as growth in foreign exchange and national income, assured security, employment generation and enhanced technical and financial capabilities. Mr. Riddhi Biswas in his article '*Reinsurance and Indian reinsurance market*' presents

an overview of the reinsurance sector in India. Importance of reinsurance in administration of crop insurance across various jurisdictions is discussed by Mr. Ajay Singhal, in his article '*Reinsurance- The backbone of Crop Insurance*'. Mr. Sanjay Datta, in his article '*Reinsurance- Its evolution and role in the Indian context*' presents an overview of the evolution of the reinsurance sector in India and its current status. Mrs. Neha Anand in her article '*Cyber Insurance and Reinsurance trends*' depicts the ever increasing complex nature of crime focusing especially on the risk of cyber attacks and how they are a potential threat to the business operations of any company, thus building the narrative for the need of reinsurance for cyber insurance in today's world. In her article '*Climate change- Modelling and Pricing*

*Challenges*', Ms. Prachi Ajmera stresses upon the importance of having a sound technological disaster management system in place to deal with natural catastrophes alongside having a National Nat Cat Insurance Program to deal with such events.

With rapid changes sweeping across the country viz. digitalisation, globalisation, and urbanisation – we are seeing an increasing amount of new risks. Many of these are intangible – things like cyber, intellectual property, and reputation risk are examples. Providing insurance to these new intangible risks presents greater challenge to insurers as well as reinsurers. The insurance and reinsurance industry together needs to rise to the occasion to meet the expectations of customers in this digitally dependent world.

## 'A World at risk: Underinsurance in India'

**Shankar Garigiparthi,**  
Country Manager & CEO, Lloyd's India



Underinsurance, or the lack of adequate insurance against risks, can have a significant effect on our economies and livelihoods. In the uncertain times we live in, we are facing growing threats of natural disasters and new emerging threats such as cyber-attacks and terrorism. Infrastructure, public assets and services must be restored after these incidents inevitably strike and without insurance, recovery efforts fall on those who are already most affected – such as the individuals who have lost their homes, the businesses who face disruption, and the governments that must help them through it.

Lloyd's recently released *A world at risk*, the second iteration of its flagship global underinsurance report, undertaken in conjunction with the Centre for Economics and Business Research (CEBR). This report looks at non-life insurance levels and insurance penetration data for natural catastrophes in forty three countries across

the world. It reveals that there is still a significant gap between the level of insurance needed to cover global risks, and the actual costs to businesses and governments in rebuilding and recovery efforts. In 2018, the value of the global insurance gap stands at USD 162.5 bn – a decrease of 3% from USD 168 bn since Lloyd's first underinsurance report in 2012.

There are many important findings from Lloyd's report. The main one being that the

Underinsurance, or the lack of adequate insurance against risks, can have a significant effect on our economies and livelihoods. In the uncertain times we live in, we are facing growing threats of natural disasters and new emerging threats such as cyber-attacks and terrorism.

global insurance gap has hardly closed. A 3% decrease over six years, especially at a time when the global economy has grown exponentially (which means more assets at risk), highlights the threat to global economic development that underinsurance presents.

Worryingly, India continues to have one of the highest levels of underinsurance globally, despite progress being made in insurance penetration (India's rate slightly increased to 0.9%, from 0.7% in 2012). At USD 27 bn, India's insurance gap accounts for 17% of the global gap, an increase from USD 19.7 bn in 2012. Out of the 43 countries analysed, India ranked 37th for its overall level of insurance penetration – the same as it received in 2012. Since the last Lloyd's report, India is the only country that has dropped out of top ten countries with highest expected losses per annum as a percentage of GDP, however, this may



partly be due to the Philippines entering the top ten because of the devastating damage it suffered from Typhoon Haiyan in 2013. With India being the second most populous country in the world and it being highly exposed to risk from natural catastrophes, more must be done to close this gap.

The report also highlights a split between the developing and developed world. A staggering 98% or some USD 160 bn of the total underinsurance gap comes from developing countries. Besides India, the rest of Asia also features significantly among the underinsured. This might be because the region is most exposed to risk from natural disasters compared to anywhere else in the world (Lloyd's City Risk Index 2018 estimates that 54% of Asia Pacific's risk exposure comes from natural disasters alone) with Bangladesh, Indonesia, the Philippines and Vietnam joining India to be among the countries with the lowest levels of insurance (as a ratio of GDP).

The report also focuses specifically on the increasing risk of flood in many parts of the world, much of which can be attributed to the impact of

The report also highlights a split between the developing and developed world. A staggering 98% or some USD 160 bn of the total underinsurance gap comes from developing countries. Besides India, the rest of Asia also features significantly among the underinsured. This might be because the region is most exposed to risk from natural disasters compared to anywhere else in the world

man-made climate change. Asia suffers more floods than any other place in the world, with more than 600 significant floods occurring since 2008. India is no stranger to this, with the Kerala region undergoing earlier in 2018 what some officials have called the worst flooding in a century – almost 500 dead and missing, at least a million displaced and official estimates of USD 5.5 bn in damage.

While the threat from natural catastrophes is ever increasing, countries also face a new threat in cybercrime. In 2017, cyber-attacks were estimated to cost businesses

up to USD \$ 608 bn a year – the potential for loss of data, revenue and reputation can be just as destructive as any natural disaster yet underinsurance in this area is particularly high. This will soon be the new world order in threats to businesses and governments all over the world.

Greater resilience is key for developing countries like India to build business confidence which will then stimulate economic growth. To address the underinsurance issue in India, our industry must do more to facilitate meaningful partnerships with key stakeholders such as the government. There is no one group that can solve this problem. Policymakers, business leaders, communities and insurers must work together and identify where insurance gaps exist and accelerate insurance uptake and understanding. Only then can we make any progress in trying to close them.

*Views expressed in this paper are author's personal only and not of the affiliating organisations*



## Relevance of Life Reinsurance in current Indian context

**Sunayana Mahansaria**

Chief Marketing Actuary – Life and Health, Munich Re India Branch



### Introduction

The life reinsurance market in India has demonstrated strong expansion over the past decade. The market size of life reinsurance in India today exceeds INR 2,100 crore, representing an annualized expansion rate of almost 21% over the past decade i.e. between FY 2007-08 and FY 2017-18. (Source: Public Disclosures)

This growth has been supported by the growth of the direct life insurance market and by the increase in sums assured for new business, especially for individual life. The chart

below indicates the increasing focus on protection products in recent years, as exhibited by expansion in individual new business sums assured.

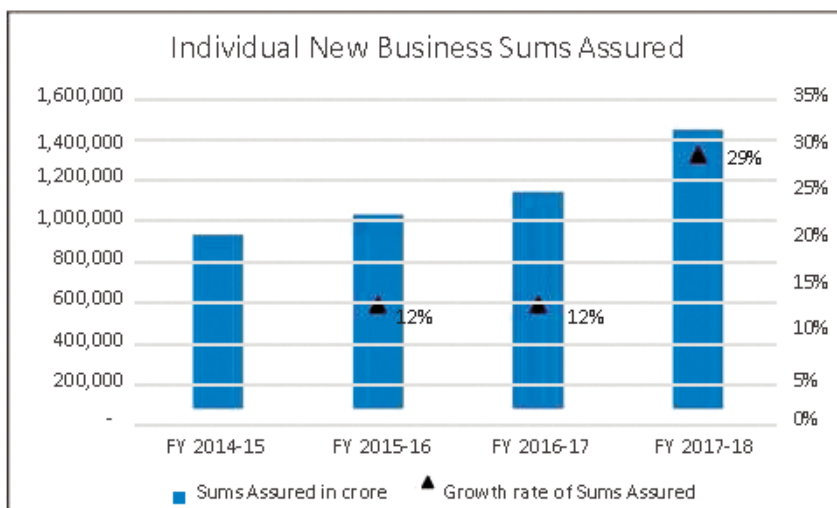
In addition, life insurers have been expanding the scope of protection coverage from pure mortality, to include morbidity and health risks, and this trend looks set to continue. Reinsurers support the industry not only by providing capacity, but also providing international best practices, for example, in framing product boundaries, definitions and exclusions for these products. Given the rapidly changing product landscape, the need for life

reinsurance support continues to increase.

### Regulatory aspects

Until 2013, life insurers were able to independently decide on the levels and forms of their reinsurance arrangements. The Insurance Regulatory and Development Authority (Life Insurance – Reinsurance) Regulations, 2013 encouraged insurers to set minimum retention limits based on the age of the insurer and year in which the risk was introduced. This led to a significant change to the reinsurance arrangements, requiring insurers to retain most of the risk coming from the lower sums assured levels.

The Draft Insurance Regulatory Development Authority of India (Reinsurance) Regulations, 2018 seeks to have the reinsurance arrangement to be decided by the life insurers, subject to a minimum sum at risk being retained on an overall portfolio level. The draft also



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contains provisions allowing for alternate risk transfer arrangements on a case to case basis.

If finalized in the current form, the new reinsurance regulations will bring several advantages to life insurers.

- Life insurers can bring in new products while sharing higher amounts of those risks which they are still not comfortable with, given lack of experience in those areas.
- Product lines such as micro-insurance or morbidity products, can be written by insurers in higher volumes with adequate reinsurance support at the backend.
- Reinsurers will also be more incentivized to bring in newer concepts given that the regulations, in the proposed form, removes the requirement for life insurers to follow an order of preference of cessions.

**Benefits offered by reinsurers to life insurers**

In India, reinsurers offer a wide spectrum of risk coverage and technical services to direct life insurers. In this context, it is important to recognize that the value brought in by reinsurers is not purely transactional (offering risk pricing) but in fact covers a wide spectrum of technical value added

services, which can aid life insurers to better manage their core business and processes. The benefits offered by a full service reinsurer can therefore be divided into two classes: Direct benefits and Value added services. Let us have a detailed look at how reinsurers are relevant in the rapidly evolving product and risk landscape of life insurance:

**Direct benefits:**

- 1) With rising incomes, nuclearisation of families and consequent increase in personal liabilities, the average sums assured sold in term insurance products have risen, at several life insurers, to INR 10 million. Reinsurance capacity is available to absorb these high sums assured and beyond, so that insurers can write larger volumes of policies, while minimizing the volatility impact to their financial statements.
- 2) Insurers can offer a wide variety of morbidity covers which protect against various critical illnesses and also niche covers protecting against cancer, cardiac diseases at various severity levels. This is made possible as reinsurers share in the risks over the term of the policies. In addition, insurers can use reinsurance risk premium rates as a basis for setting their own morbidity assumptions.
- 3) With changes to the reinsurance regulations, it is

likely that reinsurers will be able to assist direct life insurers to optimize their capital position and reduce the strain of writing new business through offering a suite of capital solutions.

4) Reinsurers offer capacity to cover mass market insurance schemes, enabling government promoted insurance schemes to be successful in achieving deeper insurance penetration within India.

5) Insurers relatively less experienced in writing micro-insurance schemes can offer this coverage with support of reinsurers uniformly sharing in the risks.

**Values added services:**

- 1) Over the past decade, a number of new products in the market have been brought in by reinsurers as value added services to support their clients. Reinsurers bring in not just the design aspects but also share the international experiences of how certain products have fared in other similar markets around the globe. Insurers can leverage this information to make informed decisions when introducing these concepts in the Indian market. In the current context of rising awareness of protection, reinsurers assist in setting optimal technical definitions and claims processes which are essential for successful product risk management.
- 2) Reinsurers share best

practices with their clients on a range of aspects: it is common for reinsurers to conduct trainings for clients on technical aspects such as underwriting and claims management, and to hold forums where topics of common interest can be discussed and debated. Besides conducting their own events, reinsurers regularly contribute to industry events by having their experts speak on global developments or local issues of relevance.

3) The widespread fraud in the industry (mainly on term insurance products) has impacted the entire life industry in India over the past five years and is only now showing signs of abating. Reinsurers have worked alongside insurers to stem frauds, offering a range of

predictive analytics services to help identify malpractices and deal with the root cause of fraudulent claims. Several insurers have reported an improvement in the experience after incorporating these tools within their risk management framework.

4) Reinsurers have the advantage of being an independent neutral third party which is tuned into the issues facing the industry and has the technical capabilities to deal with these aspects. Reinsurers therefore share information on suspicious claims, prepare industry wide experience studies, and help in setting of standardized definitions for the industry.

5) Reinsurers can bring in service providers with whom they have global tie ups, to

offer value added services such as medical second opinions or third party administration. These services reach the end customers of direct life insurers at a nominal cost on account of the larger volumes sourced through the global offices of reinsurers.

Many international reinsurers have set up offices in India, to be able to better serve the Indian market, with the mixture of local market knowledge and international best practices being shared with their clients.

The life insurance industry in India can and will continue to grow, and by forging a healthy relationship with reinsurers it will achieve a higher reach while ensuring a robust risk management framework.

**WHAT** do you think about the strength and the quality of insurance policyholder protection in India??

**Do** you think that what has been done for protecting the interests of the policyholders since 20 years of opening of the insurance market been adequate?? If no, then what can be done to improve the same???

**T**hese issues will be discussed in the next issue of the IRDAI Journal. Write us your views on the same @ [irdajournal@irda.gov.in](mailto:irdajournal@irda.gov.in)

*The article was written prior to the notification of IRDAI (Reinsurance) Regulations, 2018.*

## Factors influencing the Reinsurance demand in India: A study

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Dean and Chairman - Placements

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### Introduction:

In the current competitive insurance scenario, the successful survival of an insurance company depends not only on adequate pricing of its products to cover costs but also on capital management and risk management. Reinsurance is one such valuable and multifaceted product which on one hand helps an insurance company to effectively hedge against its business risks and on the other hand enhances its capital position. The “reinsurance demand” by an insurance company is primarily motivated by its risk bearing ability. As the risk bearing ability of different insurance companies depends on its firm specific characteristics, the “Reinsurance demand” by these companies should also vary according to these characteristics. Therefore, in this study an attempt was made to identify the firm specific factors influencing the

“Reinsurance demand” by non-life insurance companies in India.

### Current Scenario of Reinsurance industry in India:

The Indian reinsurance market is witnessing dynamic changes with the liberalisation of reinsurance regulations. The Regulator seems to have followed the “domesticating Reinsurance” model to arrest capital flight and to mitigate other risks. Establishment of Foreign Reinsurance Branches (FRBs) and the setting up of IIOs in GIFT IFSC Gujarat is a new paradigm which will play a crucial role in making India a global reinsurance hub. GIC Re is the National Reinsurer of India and has enjoyed monopoly in the Indian Reinsurance Market till the year 2016.

The reinsurance market in India is currently worth around INR 300,000 million (US\$ 47 billion) annually and is estimated to grow to INR

700,000 million by 2022. (Alice Vaidyan (2018))<sup>1</sup>. Further the reinsurers in India have a domestic

### Current Scenario of Reinsurance industry in India:

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<sup>1</sup>Alice Vaidyan (2018). Alice G Vaidyan CMD GIC Re, ‘Insights - India Rendezvous Update’, Asia Insurance Review, March 2018.

customer base of 58 Insurance companies comprising of 24 Life insurance companies (1 in Public Sector + 23 in Private Sector) and 34 Non-Life insurance companies (6 in the Public Sector + 28 in Private Sector)<sup>2</sup>.

### Review of Literature and Research Questions:

Various studies related to determinants of reinsurance demand have been reviewed and it was found that though considerable research has been devoted to determinants of reinsurance demand, the studies have been mostly confined to developed insurance markets. Little attention has been paid to the demand analysis of reinsurance in emerging markets. Secondly, it was observed that there is no study focussing on reinsurance demand using Indian data. In this context a question arises that will the determinants of reinsurance demand be the same in India? and if so, will the direction and the impact of determinants be the same as found in earlier studies?

### Objective of the Study:

The objective of the current study is to identify the factors that influence the Reinsurance Demand in India.

### Research Methodology:

The focus of the study is on the Reinsurance demand of Non-life insurance sector in India. Out of the 34 Non-life Insurance companies currently operating in India, 21 companies (4 from the

Public Sector and 17 from the Private Sector) are selected for the study, excluding specialised insurers ECGC and AIC, Seven standalone health insurance companies and the private General insurance companies which have not completed at least two years of operation. Initially the sample consisted of One Ninety Nine observations, but due to the rolling method used in measuring Earnings volatility, Twenty observations related to last year of Twenty companies and 9 observations related to first year of nine companies which have started their operations after the year 2006-07 are lost. The final sample used for panel data regression consists of One Seventy observations pertaining to these Twenty One companies over a period of eleven years from 2006-07 to 2016-17. The sample of companies is representative of the non-life insurance sector in India since the market share of gross written premiums of these companies was more than 90% from FY2006-07 to FY2015-16 and 89% in FY2016-17. The data for the sample is collected from Public disclosures and Annual reports of the insurance companies. A set of eight firm specific factors related to General insurance companies in India i.e., Firm Size (FS), Investment Performance (IP), Underwriting Risk (UR), Earnings Volatility (EV), Long tail Business (LTB), Premium Growth (PG), Return on

Assets (ROA), Liquidity (LIQ) were taken as Independent variables and Reinsurance Demand is taken as Dependent Variable. The choice of Independent variables is based on relevance to the Indian insurance scenario and also availability of data. Panel data regression analysis has been chosen to study the impact of independent variables on Dependent variable as the sample consists of both cross sectional and time series data. The panel data set is unbalanced as all the sample companies were not in operation from FY2006-07 and data for some companies in some years was missing. Stata 14.0 software was used to run the panel data regression and obtain the results.

### Regression Model:

The panel data regression model developed for this study is as follows:

$$RD_{it} = \alpha_i + \beta_1 FS_{it} + \beta_2 IP_{it} + \beta_3 UR_{it} + \beta_4 EV_{it} + \beta_5 LTB_{it} + \beta_6 PG_{it} + \beta_7 ROA_{it} + \beta_8 LIQ_{it} + u_{it}$$

In the above equation, Reinsurance demand is expressed as sum of intercept ( $\alpha_i$ ), Product of Independent variables and their respective coefficients ( $\beta_1, \dots, \beta_8$ ) and the error term ( $u_{it}$ ). The coefficient of an independent variable measures the change in dependent variable for a unit change in independent variables.  $i$  and  $t$  denote different companies and years of the sample.

<sup>2</sup>IRDA Website [www.irda.gov.in](http://www.irda.gov.in)

### Measurement of Variables:

Table 1 explains how the Dependent and Independent variables considered for the regression model are measured.

**Table 1 –MEASUREMENT OF VARIABLES**

Variable	Measured Through
Reinsurance Demand (RD)	Premium on Reinsurance Ceded / Gross Written Premium
Firm Size (FS)	Natural Logarithm of Total Assets
Investment Performance (IP)	(Net Income from Investments / Total Investment) X 100
Underwriting Risk (UR)	Net Claims Incurred / Net Premiums Earned
Earnings Volatility (EV)	Natural Logarithm of Standard deviation of Profit After Tax for three years on a rolling basis during the sample period
Long Tail Business (LTB)	Technical Reserves / Net Premium
Premium Growth (PG)	(Net Premiums Earned in Current year – Net Premiums Earned in Previous year) / Net Premiums Earned in Previous year
Return on Assets (ROA)	Profit After Tax / Total Assets
Liquidity (LIQ)	Liquid Assets / Liabilities

Source: Compiled by Authors' based on earlier studies

### Factors influencing the Reinsurance demand in India - Data Analysis, Results and Discussion:

The data analysis, results and discussion related to factors influencing reinsurance demand in India is presented below:

### Descriptive Statistics related to Reinsurance Demand and Firm specific factors:

Table 2 presents the descriptive statistics for the dependent and independent variables used in the study. The mean value of RD is 0.32

which shows that the average reinsurance ceded by the non-life insurance companies across the panel data set was 32% of the gross written premium. The standard deviation of the dependent variable RD is 0.22.

**Table 2–DESCRIPTIVE STATISTICS**

Variable	No. of Obs.	Mean	Standard deviation	Min	Max
RD	199	0.32	0.22	0.06	2.46
FS	199	7.91	1.61	4.55	11.14
IP	199	10.15	3.50	5.61	24.66
UR	199	0.81	0.65	-2.23	8.75
EV	170	3.83	1.41	0.54	7.14
LTB	199	0.98	6.46	-89.35	4.23
PG	190	2.02	15.59	-31.09	173.61
ROA	199	-1.83	9.77	-41.28	22.14
LIQ	199	-0.02	11.33	-156.68	20.92

Source: Authors' own compilation based on results obtained through Stata 14.0

**Pair wise Correlations of Reinsurance Demand & Independent Variables and VIF Values:**

The pairwise correlation coefficients and VIF values are mainly calculated to check the multicollinearity between

the independent variables. A pairwise correlation of more than 0.8 and VIF value above 10 indicates the presence of severe multicollinearity between the Independent variables (Gujarati (2004))<sup>3</sup>. The results (see Table 3)

show that none of the pairwise correlation coefficients exceed 0.8 and largest VIF value is 4.39, which indicates that there is no serious problem of multicollinearity.

**TABLE 3 - PAIR WISE CORRELATION COEFFICIENTS**

	RD	FS	IP	UR	EV	LTB	PG	ROA	LIQ	VIF Values
RD	1									-
FS	-0.37	1								3.75
IP	-0.22	0.43	1							1.40
UR	-0.18	0.05	0.19	1						4.11
EV	-0.28	0.77	0.39	0.41	1					2.75
LTB	-0.25	0.15	0.08	0.21	0.12	1				4.39
PG	0.01	-0.18	0.10	0.12	-0.06	0.00	1			1.21
ROA	-0.10	0.44	-0.03	-0.24	0.18	0.04	-0.37	1		1.94
LIQ	-0.37	0.04	0.01	0.01	-0.26	-0.12	-0.02	0.07	1	3.40

Source: Authors’ own compilation based on results obtained through Stata 14.0

**Selection of optimum Panel Data Regression Model for Reinsurance Demand:**

Simple pooled OLS regression, fixed effects model and random effects model are the different panel data regression models generally used. The results related to the different

diagnostic tests indicated that fixed effects model is appropriate. Hence the results of fixed effects model are presented and discussed below.

**Results of Fixed Effects Model:**

The results of the fixed effects model shows that the “r squared value” is 0.679 which

indicates that 67.9% of the variation in the reinsurance demand is explained by the eight independent variables used in the model. More over the significant p value of the model (Prob >F =0.00) shows that model is fitted well and the coefficients of independent variables are not equal to 0.

**Table 4 – RESULTS OF THE FIXED EFFECTS MODEL AND ACCEPTANCE/ REJECTION OF NULL HYPOTHESIS**

RD	Null Hypothesis	Coefficient	Standard Error	t - Statistic	P> t	Acceptance/ Rejection of Null Hypothesis
FS	FS of an insurance Company has no influence on its RD	-0.1144	0.0105	-10.9	0.000	Rejected
IP	IP of an insurance Company has no influence on its RD	-0.0017	0.0033	-0.53	0.600	Accepted

<sup>3</sup> Gujarati (2004). Damodar N. Gujarati, ‘Basic Econometrics’, 4<sup>th</sup> edition, 2004, The Mc-Graw hill Companies.

<b>UR</b>	UR of an insurance Company has no influence on its RD	0.1499	0.0586	2.56	0.012	Rejected
<b>EV</b>	EV of an insurance Company has no influence on its RD	0.0033	0.0062	0.55	0.583	Accepted
<b>LTB</b>	LTB of an insurance Company has no influence on its RD	-0.0094	0.0021	-4.38	0.000	Rejected
<b>PG</b>	PG of an insurance Company has no influence on its RD	-0.0001	0.0003	-0.18	0.855	Accepted
<b>ROA</b>	ROA of an insurance Company has no influence on its RD	0.0029	0.0009	3.39	0.001	Rejected
<b>LIQ</b>	LIQ of an insurance Company has no influence on its RD	0.0025	0.0096	0.26	0.793	Accepted
<b>CONST.</b>	-	1.0993	0.0787	13.97	0.000	-
Number of Observations: 170						
Number of Groups: 21						
R Squared Value: 0.679						
Prob > F = 0.000						
<b>Source: Authors' own compilation based on results obtained through Stata 14.0</b>						

### Important Findings:

1. Out of the eight independent variables used in the study it is found that four variables namely *Firm size, Underwriting risk, Long tail business and Return on assets* of an insurance company are **significantly influencing** its Reinsurance demand.

2. Further it is found that out of the statistically significant variables, *Firm size and Long tail business* are **negatively related** to reinsurance demand and hence it is concluded that *as the firm size and long tail business proportion of an insurance company increases its reinsurance demand decreases*. It is also found that *Underwriting risk and Return on assets* of an insurance company are

**positively related** to Reinsurance demand. Therefore we can conclude that *as the underwriting risk and return on assets of an insurance company increases its reinsurance demand also increases*.

3. On the other hand the remaining four variables namely *Investment performance, Earnings volatility, Premium growth and Liquidity* of an insurance company **do not show statistically significant influence** on Reinsurance demand of an insurance company.

4. The findings related to *Firm size, Long tail business and Underwriting risk* are consistent with the findings of Altuntas, Garven and Rauch (2013)<sup>4</sup> and Lee and Lee (2012)<sup>5</sup> whereas as against

the positive and significant results of Return on assets in this study, the results of Adams, Hardwick and Zou (2008)<sup>6</sup> exhibited a negative and significant relationship with Reinsurance demand. As against a significant relationship of Investment performance and Liquidity with Reinsurance demand in Lee and Lee (2012), an insignificant relation is found between these variables and Reinsurance demand in this study. The insignificant influence of Earnings Volatility and Premium Growth on reinsurance demand of an insurance company is consistent with the findings of Adams, Hardwick and Zou (2008) and Altuntas, Garven and Rauch (2013).



**Conclusion:**

Using unbalanced panel data set consisting of One Seventy observations pertaining to Twenty One General Insurance Companies in India for a period of eleven years from 2006-07 to 2016-17, the current study empirically identified the firm specific factors of an insurance company that influences its reinsurance demand. The study is limited to availability of only aggregate data related

to dependent and independent variables of different companies across the sample period and there is a possibility that the factors influencing reinsurance demand may vary across different lines of insurance business. However, in spite of this limitation, this study provides some new insights to managers of insurance companies in understanding the firm specific factors influencing the reinsurance

demand in the Indian context. It is suggested that the future research in this area can include macro-economic variables and study their impact on reinsurance demand using the Indian data.

*Views expressed in this paper are author's personal only and not of the affiliating organisations*

<sup>4</sup> **Altuntas, Garven and Rauch (2013)**. Muhammed Altuntas, Garven and Rauch, 'On The Corporate Demand for Risk Management: Evidence from the global Reinsurance Market' Journal of Risk and Insurance. June 2013 76(1), pp.197-219

<sup>5</sup> **Lee and Lee (2012)**. Hsu-Hua Lee and Chen-Ying Lee, 'An Analysis of Reinsurance and Firm Performance: Evidence from the Taiwan Property-Liability Insurance Industry', the Geneva Papers, 2012, 37, (467-484)

<sup>6</sup> **Adams, Hardwick and Zou (2008)**. Mike Adams, Philip Hardwick and Hong Zou, 'Reinsurance and Corporate Taxation in the united kingdom life insurance industry' Journal of Banking and Finance 32 (2008) 101-115

## Reinsurance regulations: a step forward.

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1. International Forums keep on insisting for a free world-wide flow of risk through open and competitive reinsurance markets. They advocate that any barrier to free flow would reduce competition leading to reduced customer choice, higher reinsurance cost, increasing domestic concentration of risk.

2. In spite of the views taken by the international forums, several nations have enacted laws not commensurate with the views taken by these forums. Most nations consider country first so as to fulfil the interests of their nation. Different countries have different interests and priorities. The priorities are not static but change from time to time and accordingly the governments fix new priorities through new laws. There are many prominent countries, which have implemented protectionist regulations. USA, Canada, Australia, Argentina, Brazil, Germany, Indonesia, Malaysia, Philippines,

International Forums keep on insisting for a free world-wide flow of risk through open and competitive reinsurance markets. They advocate that any barrier to free flow would reduce competition leading to reduced customer choice, higher reinsurance cost, increasing domestic concentration of risk.



China, South Korea etc. are some examples of parenting restrictions. Barriers are implemented in different forms in different countries like-

i. Imposition of Collateral: USA mandates 100% collateral or localisation of assets for placement of reinsurance business with non-USA reinsurers (and 50% for European reinsurers). Similarly, Canada and Israel too have the collateral system.

Reinsurance

ii. Imposition of Risk Charges: China imposes risk charges ranging from 8.7% to 58.8% which is seen to be harsh for foreign reinsurers.

iii. Fixation of minimum retention: Brazil law mandates to retain minimum of 50% business within the country.

iv. Fixing maximum retrocession by reinsurers: CIMA, Francophone Countries, Argentina etc., have fixed different maximum limits that a domestic reinsurer can retrocede to a foreign reinsurer.

v. First Right of Refusal: Brazil and Philippines have necessitated the insurers to offer the domestic reinsurers, without which the insurers cannot offer to foreign reinsurers.

vi. Order of Preference: Malaysia is an example which implements order of

preference. India has the similar system enacted about two years ago.

- vii. Compulsory minimum cessions: Many countries including Brazil, CIMA, Russia, Srilanka etc., have mandated that a minimum percentage of all business or reinsurance business is to be placed with the national reinsurer or domestic reinsurers.
- viii. First exhaust the domestic capacity: Some countries like Nigeria have regulations mandating insurers to place with foreign reinsurers only after the domestic capacity is exhausted.
- ix. No face to face discussion: There are draconian laws in countries like Germany and South Korea which ban face to face discussion by domestic insurers with foreign reinsurers.
- x. Need of physical office: Countries like Argentina do not allow cross border reinsurers to participate unless they have their offices in their countries.
- xi. Reinsurance credit: Many countries either do not grant credit or grant a lesser credit for reinsurance placed with foreign reinsurers or those in non-equivalent

Prior to Insurance Law Amendment Act (2015), India had only GIC Re as the Indian Reinsurer. The direct insurers were mostly dependent on the foreign reinsurers. Placement with GIC Re was limited. Now, India has allowed foreign reinsurers to open their branches in the country.



jurisdictions. Portugal is an example.

- xii. Law on denying reinsurance placements with cross border reinsurers on certain lines of business: Francophone countries do not allow certain lines of business for placement outside.
  - xiii. There are several other restrictions in other forms imposed by several other countries.
3. The fact remains that the international reforms are put on a back seat, when one discusses a country's interest. Had that not been the case, perhaps we would not have seen the restrictions from countries like USA, Germany, Russia, China etc. Indian entities have to struggle a lot to get a pie from such foreign countries. It is not easy sailing for Indian companies to venture into another country for business. In contrast, India has laid red carpet for all those who tried to create barriers for it. India is an emerging nation
- Reinsurance

and is different from many countries. More domestic changes are needed to protect its interest and to compete at the international level. Any emerging nation needs to design its laws very carefully. India never imposed any restriction over a foreign reinsurer so far.

4. The regulation on Order of Preference is a well calculated strategy to achieve the dream of making India a reinsurance hub. On one hand it caters to its own interests and on the other it respects international institutions. Order of preference does not restrict foreign reinsurers from participating in Indian business. In spite of the order of preference, today, the business going outside India is equal to one third of its total reinsurance business. Unlike many other countries mandating higher ratings, India accepts BBB (of S&P, or equivalent rating of other rating agencies) rating. It simply says that the foreign reinsurers should be from a DTAA country and should have the minimum solvency margin as required by their home countries. India is more an open market in the sense that it has not imposed any collateral or risk charges so far. India considers retention of whole thing within the country as a risky affair. Therefore, it allows international players also to

participate for better diversification.

5. Prior to Insurance Law Amendment Act (2015), India had only GIC Re as the Indian Reinsurer. The direct insurers were mostly dependent on the foreign reinsurers. Placement with GIC Re was limited. Now, India has allowed foreign reinsurers to open their branches in the country. The scope and choice, for placement by Indian insurers writing direct insurance business, have expanded as India registered several top global reinsurers during the last couple of years. The Indian insurers are now able to cede to foreign reinsurers through their branches next to their doorsteps. It is expected that more such foreign players would open their shops in India. This would help increase capacity and retention within the country along with aiding in the increase of foreign exchange, building of technical capability and provision of employment.

6. The Foreign Reinsurers' Branches (FRBs) and other Indian reinsurers/insurers are directly regulated by IRDAI, whereas, the Cross Border Reinsurers (CBRs) are not. The FRBs retrocede to their parent companies. The FRBs are bound to retain minimum 50% of their domestic business, in India. However, there is no mandate for CRBs to maintain any retention in India of the business placed

with them. Hence, retention in India for CBRs is out of question. Therefore, placing business with IRDAI regulated entities is always safer than placing with CBRs.

7. As far as diversification of risk is concerned, India has got about ten top highly rated and established global players. IRDAI has granted registration to another new Indian Reinsurer. The International Financial Centre (IFSC-SEZ) in Gujarat is emerging. As these FRBs and IFSC offices are allowed to retrocede outside up to 50% and 90% respectively; India has targeted to sufficiently diversify the risk in the international arena. Through the order of preference, the diversification has gone wider not only among many on-site players but also with global players through direct reinsurance placements and retrocession arrangements.

8. The CBRs are better placed to provide quotes at a lower rate than the domestic players. The reinsurers in India need to comply with the Indian regulatory norms (like maintaining capital, solvency, Investment, actuarial, corporate governance etc). The cross border reinsurers are not subject to Indian laws or the Indian tax regime. They enjoy tax advantages as compared to the Indian players. It is a fact that Indian Companies are comparatively in a disadvantageous position

Prior to Insurance Law Amendment Act (2015), India had only GIC Re as the Indian Reinsurer. The direct insurers were mostly dependent on the foreign reinsurers. Placement with GIC Re was limited. Now, India has allowed foreign reinsurers to open their branches in the country.



than the CBRs. Therefore, there is an argument that the domestic players should be incentivised. Absence of incentives to on site entities in India; may give room to foreign reinsurers to think twice before they propose to open their offices in India. They can play safe from outside by participating from their home countries than opening any shop in India. This was never the intention of India.

9. As far as freedom and competition is concerned, the Order of Preference has given freedom to the cedants (customer) to seek quotations from any reinsurer it likes including the CBRs. This encourages free competition and also helps the cedants to discover price. Like many other countries, Indian regulations provide for an order of preference, which prefers the reinsurers on the Indian soil first and then the foreign reinsurers. It encourages to utilise the domestic capacity first and then to choose the foreign

reinsurers. The law is designed in such a manner that it not only helps the Indian companies to increase capacity but also ensures the spread of risks across the globe.

10. Some argue that the order of preference limits innovation. The fact remains that even after introduction of Order of Preference in 2016; the market has brought in many innovative products without any problem. Rather, it helped inflow of knowledge and technical expertise.
11. The experts view that the regulations offer more balanced, flexible and liberal regime than those in many other countries. Sometimes, a minimum level of restriction works in favour as a blessing in disguise. It is a win-win situation for all stakeholders. One may not constrain with short term results but should have patience to see a long term outcome.
12. It is on record that the countries which have built up their markets are not an overnight outcome. They are successful either because they had imposed restrictions earlier or are still practicing trade barriers. It is seen that many could develop their reinsurance markets and hubs because initially they put several

restrictions for the CBRs and provided lot of incentives to the on-shore players. The countries gradually tried to remove such restrictions in a phased manner, once they reached the point of self sufficiency by becoming international reinsurance markets. Singapore is one such example. Initially it had restricted the foreign reinsurers by way of collaterals etc. As a result, the foreign reinsurers gradually opened their offices in Singapore gained the advantage of being admitted and preferred reinsurers. Gradually, when most of the players operated from Singapore, the country became self-sufficient through a hub and finally dispensed with the restrictions. Today, Singapore is an internationally renowned reinsurance market.

13. While favouring order of preference, the experts underline the fact that many stakeholders including the intermediaries primarily operate to promote their self interests. Sometimes, the interest of a particular stakeholder may contradict with that of another. It is very difficult to have in place a regulation that satisfies all the stakeholders equally. However, the regulations should keep

the larger interest of the industry and the country in mind. At this juncture, when India invites foreign players to open their offices, order of preference works like blessing in disguise for a brighter future.

14. The other important aspect beyond the regulatory arena is to have a favourable tax regime at least at par with those in other countries. This boosts the market without losing the income by the process of economies of scale. The government's intervention is necessary towards this.
15. To conclude, it is believed that the order of preference has been working well. It has attracted more foreign players to open their offices in India. By the process, it will help increase in capital and capacity, growth in foreign exchange and national income, assure security and diversification and generate employment and technical expertise. Order of preference should continue until India achieves its goal of becoming a reinsurance hub.

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## Reinsurance and Indian reinsurance market

**Mr. Riddhi Biswas**

Global Insurance Brokers Pvt. Ltd.



Today, there are many reinsurance companies of varied size, operating across various countries and regions. Below is the list of top Twenty reinsurers as published by the rating agency A.M BEST. The top slots are occupied by the age old Munich re and Swiss Re followed by various other markets. Another interesting fact is that the top ten players are writing over 70% of the total life and non-life unaffiliated gross reinsurance premiums and it shows that the market dominance is being continued by a handful of players.



Back to 26<sup>th</sup> November, 2008, the fateful and jinxed day when terror struck Mumbai and the ordeal ensued, a pall of gloom descended in the wake of the massive massacre of human lives and properties. Most of us watched it with a sense of

horror and compassion but a cluster of people and company viewed it with a different angle in addition to looking at with a common thread of commiseration enveloping each of us. Their main contemplation was how to support the affected and bring the normal life back. They came forward with their coffer to offer help. These are none but insurers and reinsurers and their underwriters and claims team. Sitting across miles afar whether in London, Dubai or Singapore, these typical people looked through the same lens of reinsurance and fulfilled their contractual obligation. The examples are not too far to seek- whether it is the Japan's devastating earthquake or Thailand floods or missing of Malaysian airlines, the ripple effects of which touch the shores across the various frontiers and thus they extend stability and diversification to the insurers. The significance of reinsurance is therefore sui generis and reinsurers are truly a 'friend in need' and an

ally in apocalypse.

It is believed that reinsurance took its birth when Cologne Re, which wrote the first reinsurance treaties in 1852, one decade after the Great Fire of Hamburg. It is then merged and became a part of Gen Re (a subsidiary of Berkshire Hathaway) in the 1990s. In 1863 and in 1880, The Swiss Reinsurance Company was established in Zurich, and Munich Re in Germany respectively.

Today, there are many reinsurance companies of varied size, operating across various countries and regions. Below is the list of top 20 reinsurers as published by the rating agency A.M BEST. The top slots are occupied by the age old Munich re and Swiss Re followed by various other markets. Another interesting fact is that the top ten players are writing over 70% of the total life and non-life unaffiliated gross reinsurance premiums and it shows that the market dominance is being continued by a handful of players.

## Ranking of Reinsurers as per 2017 data:

Ranking	Name of the Reinsurance Company	Gross Life & Non-Life Reinsurance Premiums Written(in USD)	Loss Ratios (3)	Expense Ratios (3)	Combined Ratios (3)
1	Munich Reinsurance Company	\$37,821	80.50%	33.50%	114.00%
2	Swiss Re Ltd.	\$34,775	82.30%	33.10%	115.40%
3	Berkshire Hathaway Inc.	\$22,740	N/A	N/A	116.40%
4	Hannover Rück S.E.	\$21,314	71.30%	27.80%	99.10%
5	SCOR S.E.	\$17,718	71.00%	32.70%	103.70%
6	Lloyd's	\$14,250	83.80%	33.30%	117.20%
7	Reinsurance Group of America Inc.	\$10,704	N/A	N/A	N/A
8	China Reinsurance (Group) Corporation	\$10,435	62.60%	41.30%	103.90%
9	Great West Lifeco	\$7,924	N/A	N/A	N/A
10	Korean Reinsurance Company	\$6,775	77.70%	18.70%	96.40%
11	General Insurance Corporation of India	\$6,497	86.30%	17.50%	103.80%
12	PartnerRe Ltd.	\$5,588	69.80%	29.50%	99.30%
13	Everest Re Group Ltd.	\$5,115	76.60%	26.50%	103.10%
14	XL Group Ltd.	\$4,916	79.90%	31.50%	111.30%
15	Transatlantic Holdings, Inc.	\$4,211	73.10%	33.80%	106.90%
16	MS&AD Insurance Group Holdings, Inc.	\$3,385	N/A	N/A	N/A
17	R+V Versicherung AG	\$3,071	73.80%	25.30%	99.10%
18	MAPFRE RE, Compania de Reasegueros S.A.11	\$2,812	73.60%	23.20%	96.80%
19	Renaissance Re Holdings Ltd.	\$2,798	108.40%	29.60%	137.90%
20	The Toa Reinsurance Company, Limited	\$2,505	70.10%	26.30%	96.40%

Source: A.M. Best

### Indian Reinsurance market:

Indian reinsurance is rapidly becoming a force to be reckoned with. It is growing at a spectacular CAGR of close to 20% in the last five years in tandem with direct insurance. In 2016-17, it had

clocked total RI premium \$ 4.574 billion as depicted in exhibit 2 in detail. Few years back, it was only national carrier GIC Re present in India. But once regulations allowed the entry of foreign players in 2015, ten foreign reinsurers have opened their

shops here along with GIC Re. GIC Re has also become one amongst the top eleven players in the world. The recent boost in insurance and reinsurance in India is largely attributed to the meteoric rise of crop insurance.

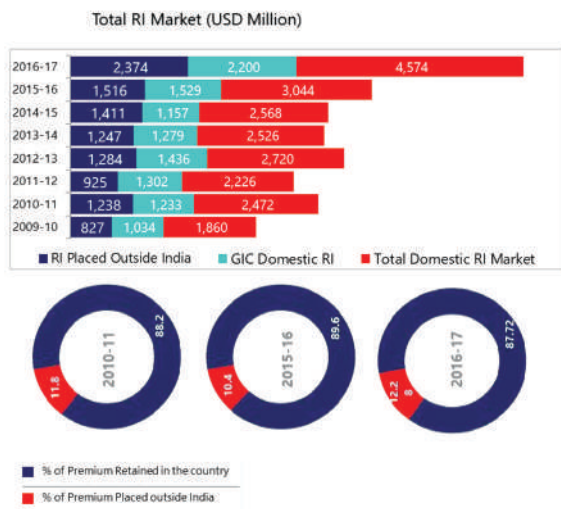


Exhibit 2  
Data source: IRDAI Annual Report

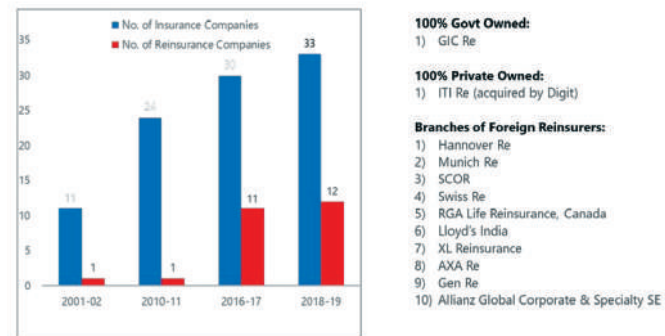


Exhibit 3: Data source: IRDAI website

**Challenges of reinsurers:**

The reinsurance industry close to USD 600 billion is bearing the brunt of many challenges. The most teething among them are the following:

- Many M&As
- Downward pressure on profitability due to low cession rate, high commission, etc
- Availability of alternative capital
- Increasing bargaining power of the insurer and uptick in the retention by them
- Local regulations

When insurance companies merge into fewer while in the same country or become a part of global insurance partner, total reinsurance order automatically comes down. To rub salt on the wound, if it is a part of global big insurance group, it no longer needs to do reinsurance as its risk can be offset with some unrelated policies written in a bouquet of other policies. Moreover, technological amelioration has

also facilitated in streamlining this operation. Recent such insurance companies in India are HDFC-ERGO and L&T Insurance in general segment. In a very recent move in Sri Lanka, Allianz local company and another top five player Janashakthi Insurance has been amalgamated by an acquisition by the Allianz group. And these M&A activities are trenchant across geographies, thus leading to less reinsurance requirements.

Due to the intense competition, the net RI rate is becoming abysmally low. This is either making the reinsurer averse to a proposal or taking much less share. Today, in India the fire policy rate is so low that insurance companies survive by Nat Cat premium. This is adversely affecting their overall treaty results. In the exhibit also, it is shown that most companies' combined ratio is crossing 100% - a matter of concern for the players to sustain their

**ART: The new art of insurers currying favour with 'Alternative Risk Transfer' (ART)**

business model.

A well-known regional reinsurer Trust re is downgraded to B++ by A.M. BEST due to its financial statements. This has raised some red flags on the risks being taken by the reinsurer.

Another new set of competition has emerged with a nom de plume 'ART'. Catastrophe bond is one of them. Many institutional investors have now found favour through another alternative route of investment via 'Cat bond'. Issuance is gaining ground in past years with investors betting on an asset class which has less to do with market fluctuations and offers an average annual yield of 7%. As per Aon Securities, the total size has touched a new level high of \$ 30 billion in the first half of this year. Insurance companies thus evade reinsurance corridor to transfer their risk. The JV between BlackRock, an asset manager, and ACE as an



insurer, is a grim reminder of queering the pitch of reinsurers' fortune.

Globally, retention limit is also broadened the result of which is the less capacity being sought. Just as an example when D&O was first introduced to Indian market, the local market used to be hamstrung by capacity constraint and when it comes to financial institutions' D&O policy, it would be egregious. However today it has made a tectonic shift and not only does India provide capacity but terms are also very competitive that reinsurance players do not seem to be interested to support the primary markets.

An adage runs by – 'when remedy turns out to be worse than a malady'. It assumes most significance when regulations try to lay down a set of regulations to protect or safeguard the local interest. This, in turn, runs counter to proliferation of reinsurance. Moreover, local players are more familiar with regulatory hassles which necessitate them to control the risks on their books. A case in point could be taxation treaty among countries or local insurance laws on retention policy of every risk, etc.

**Challenges of India's ambition to be a reinsurance hub:**

With the entry of top notch reinsurers and government's ambitious plan to make India a reinsurance centre of gravity, it's time to shed some light on it. In the current format and status quo

maintained by the foreign reinsurers, it may be a chimera to become a global name as a reinsurance trade corridor.

A snapshot of reinsurance business in India is as follows:

- Out of twelve players, only GIC Re books a substantial 40-45% of overseas premium
- Foreign players hardly write business outside of India and if they write, it is limited to Indian sub-continent at smidgen.
- Their bizarre take of foreign business share is predominantly routed through retrocession where it originates in India as depicted in exhibit.

If the foreign reinsurers continue to maintain their stand and it is widely conceived that they will do so, it is difficult to move towards country's reverie-journey with reinsurance.

**Need of the hour**

- Let another additional 10-15 % obligatory cession go to foreign players except motor
- It will attract other reinsurers to put shops here
- Let stipulations mandate

that foreign reinsurers book some business outside of the country as a percentage of total business written

The role of reinsurance is primarily construed as a capital provider. However a closer look shows that its role goes deeper than this. It takes along with it required expertise and technology to write a risk. It spawns innovation, new idea and a lot more to manage a peril. When cyber liability is just peeping out from its nestle in India and perceived to be a complex proposition, global reinsurance players lead the way. It puts forth not only support but brings other stakeholders who wield a pivotal role in managing it. It makes the Indian market acquainted with not only the importance of an experienced underwriter but that of a cyber risk manager like Norton, IT manager like IBM and cyber extortion advisor like NYA in equal poise.

Indisputably, reinsurance smoothens insurance industry by acting as a shock absorber and always acts as a vital cog in the wheel of the sector, whenever and wherever required. However, it is not a crystal ball nor a champion of act of sorcery.

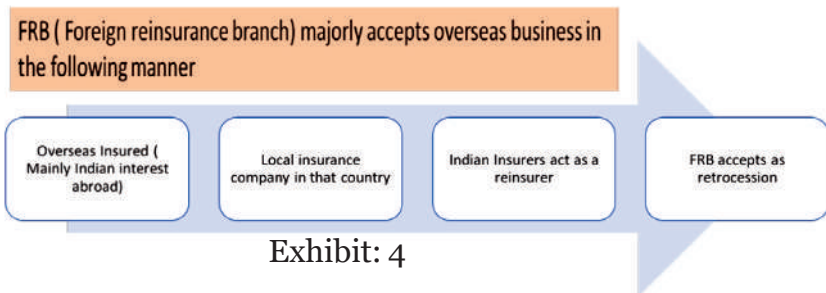


Exhibit: 4

Innovative players will continue to show supremacy by summoning up their courage to roll a rock up the hill and showcase agility and speed across risk analysis, underwriting and capital fields. Insurers to facilitate the navigation of unexplored fields. dispensation to primary

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## Reinsurance: The Backbone of Crop Insurance

**Ajay Singhal**

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### Background:

The importance of agriculture in India needs no introduction. About 58 % of India's population is engaged in agriculture. It contributes about 16% of Gross Domestic Product (GDP) of India. More than 80% farmers are small and marginal (having less than 2 ha of land). Most of the agriculture area is rain fed (60%) and only 40% land is irrigated. Agriculture, in fact, is the most risky enterprise in India as it is exposed to systematic/ catastrophic risks which are high in both frequency and volume. Considering this, crop insurance has always been an important tool for risk mitigation. Although various crop insurance schemes have been operating in India since 1985, most of them were implemented on administered platform where Government was contributing if the claims were exceeding the premium amount. The sole agency for implementing these schemes have been GIC/ AIC. However, from Kharif 2016,

the Government of India has introduced market driven scheme, namely, Pradhan Mantri Fasal Bima Yojana (PMFBY) which is purely on actuarial/ commercial basis and 18 companies (including 5 Government companies) have been empanelled to implement the same.

### Crop Insurance Cycle:

Unlike any other line of insurance, Crop Insurance is a multi-stakeholder scheme where Central Government, State Government, Bankers,

Insurance Companies, Reinsurance Companies and Farmers are the main stakeholders.

There are 5 main phases in the insurance cycle which repeats every cropping season. All the stakeholders are involved in the cycle. The Banks and Government act as facilitators in the process. The cyclical flow diagram of the seasonal insurance cycle which keeps repeating every crop season is as under:

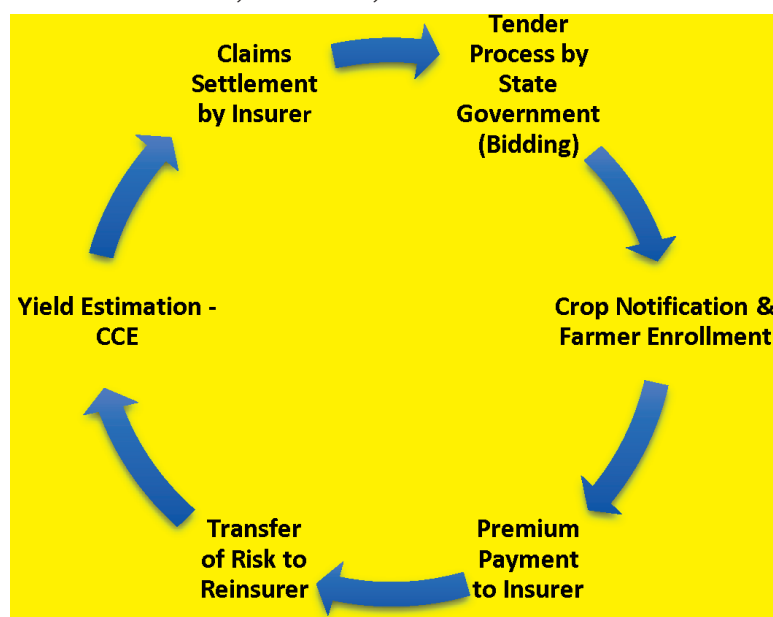


Fig 1: Insurance Cycle under PMFBY Scheme

**PMFBY impact on Crop Insurance in India:**

The Gross Premium under Crop Insurance has multiplied to four times in the very first year of introduction of

PMFBY (from Rs. 5500 crore in 2015-16 to Rs. 22000 crore in 2016-17). The premium in 2017-18 is around Rs. 25000 crore and likely to be Rs. 28000 crore

in 2018-19. India is at number three in the world after USA and China in terms of Crop Insurance Direct Premium.

**Table 1: Premium (USD million)**

Global Agriculture Premium (USD million)	26300		
Premium (USD million)	USA	China	India
Gross Premium	12000	7900	3600
<i>exchange value taken as USD 1 = INR 70</i>			

**Need of Reinsurance under Crop Insurance**

As mentioned earlier, the risk size under PMFBY has increased manifold and therefore the need of reinsurance is obvious for Insurance Companies to accept this line of business considering their underwriting capacity and solvency margin. The selective nature of participation from riskier area leads to higher risk exposure. Crop Insurance being a seasonal business, the variation in ultimate loss ratio is also very high on annual basis and there is delay in

receipt of upfront subsidy from Government. There is hardly any gap in receipt of Funds (Premium Subsidies) and Claims payments. Hence no corpus and very low investment income is generated here unlike other lines of insurance. Therefore, to be able to underwrite more business, to deal with the systemic risk and bring diversification and stabilization, reinsurance requirement is more in crop insurance than any other line of insurance.

It is pertinent to mention that the extent of reinsurance is highest under PMFBY where

insurance companies cede about 75% of risk under Quota Share treaties and also buy Stop Loss treaties for their net retention of about 25%. Apart from this, the Facultative Reinsurance is also taken by some companies for gaps in their normal reinsurance treaties. This makes Crop Insurance as number one line of Insurance as far as reinsurance Cessions are concerned, not only in India but also in the world. The comparison of crop Insurance/ reinsurance premium *vis-a-vis* Non-Life Insurance in India is as under:

**Table 2: RI Cessions**

S.No.	2017-18	All lines of Business (Non-Life)(A)	Crop Insurance(B)	Percentage (%)C=B/A
1	Gross Direct Premium (India)	Rs. 1.5 lakh Crore	Rs. 25000 Crore	17%
2	Reinsurance Premium	Rs. 38000 crore	Rs. 21000 Crore	55%

From above, it can be seen that reinsurance is playing the most vital role under PMFBY and without it the insurance Companies would not have been able to underwrite this volume of business.

**How Crop Reinsurance works in India**

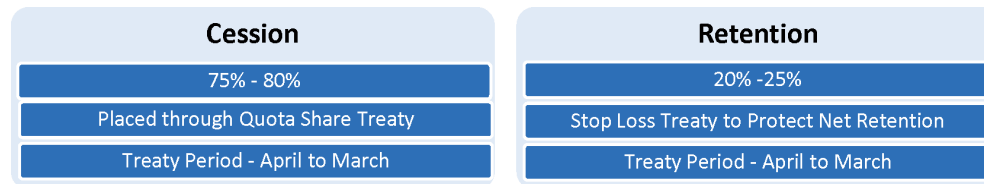
As per Operational Guidelines of PMFBY, the insurance companies are fully responsible for claims and to make appropriate reinsurance arrangements. The Regulations/Instructions

of Indian Regulator (IRDAI) are also to be followed for reinsurance Placements. The Insurance Companies keep about 20-25% net Retention and cede about 75% to 80% into Quota share (Proportional) treaties and also buy Stop Loss Treaty

(Non-Proportional) for their Net Retention. The Indian Crop reinsurance is led by GIC Re (National Reinsurer) who receive around 50% of

the Crop reinsurance premium and the balance is placed with Foreign reinsurers who have set up branches in India and Cross

Border reinsures worldwide. GIC Re is also protecting their crop Inward business through Stop Loss Retrocession with international reinsurers.



## Agriculture Insurance/ Reinsurance Models Worldwide

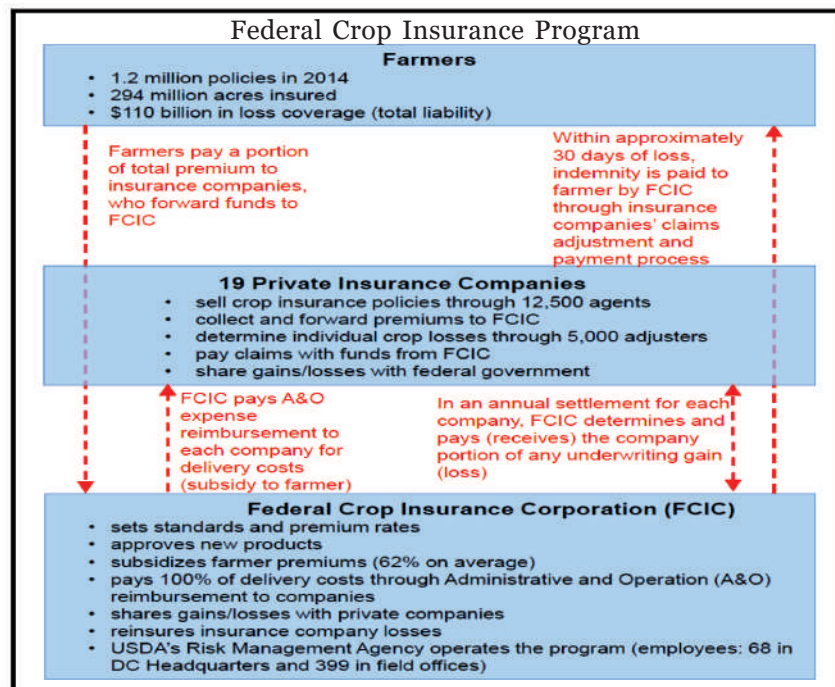
### 1. United States of America (USA)

Agriculture Insurance product, namely Multi-Peril Crop Insurance (MPCI) in the USA is administered by a Government Body called the Federal Crop Insurance Corporation (FCIC). The MPCI scheme is heavily subsidized by the government through FCIC. The FCIC is also responsible for the setting of the crop insurance rates which are on an actuarial basis. The distribution of the MPCI product is done through 18 'Agricultural Insurance Providers' (AIPs) who compete on service as the prices are set by the FCIC. About 96% of all crop insurance in the USA is MPCI. The remaining 4% of crop insurance business in the USA is Crop Hail (CH) which is not subsidized and with no government involvement in it. Unlike MPCI, Hail product is competed for both price and service by the crop insurance companies (AIPs). On behalf of FCIC, the Risk Management Agency (RMA) was created in 1996 to oversee the crop insurance program and to do the necessary research and

development to produce new and innovative insurance products. RMA also develops educational programming to help farmers learn about and implement market based risk management techniques. The RMA works with private sector Approved Insurance Providers (AIPs) to provide the public-private partnership (PPP) that make crop insurance widely available.

The Insurance companies are reinsured, pretty much exclusively, on a Stop Loss basis. US Government also

participates in the reinsurance of the Crop Insurance program through Special Reinsurance Arrangement (SRA), which is also managed by RMA on behalf of the government. The insurance company bears the portion of the risk of loss up to a certain point after which it is covered by its Standard Reinsurance Agreement (SRA) with the government. There is some Quota Share but most of the insurance companies are well enough capitalized so as not to require it from a capital management perspective.



Source: CRS, adapted from U.S. Department of Agriculture and industry sources.

## 2. Canada

As in the USA, Multi Peril Crop Insurance (MPCI) in Canada is administered by a single company in each province owned by the provincial government or by a sub department of the provincial government. There is no competition from the private sector. MPCI is heavily subsidized by both levels of government (Federal & Provincial) and Rates are actuarially set by the respective provincial company / government department. In most provinces crop insurance was introduced in the 1960's so the level of information for rating & administrative purposes is supported by quality database. Each provincial company buys Stop Loss reinsurance mainly to protect their crop insurance fund.

## 3. China

The People's Insurance Company (Group) of China (PICC) has offered crop insurance in China since the 1950s but it was only in 2007 that the central government started a subsidized crop insurance pilot for both crop and livestock. This has now grown into a USD 7bn industry and now covers forestry in addition to crop and livestock. Today PICC is responsible for 50% of all crop insurance with the other 50% offered by Twelve local and national insurance companies. All these companies buy Quota share and stop Loss reinsurance protection in the international reinsurance market. However, in 2016 the Chinese government took the decision

to set up the Chinese Agricultural Reinsurance Pool (CARP) to write 50% of all agricultural reinsurance purchased.

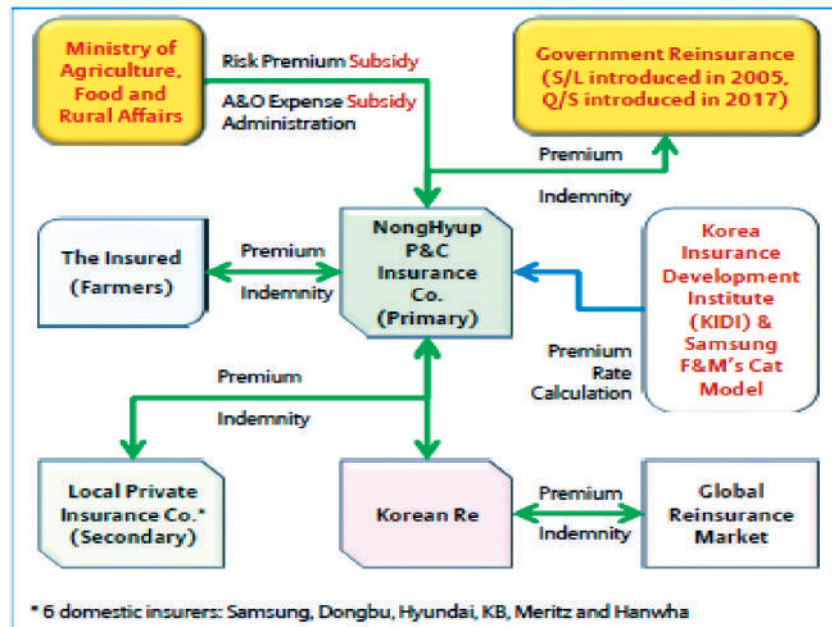
## 4. South Korea

In Korea, crop insurance program was introduced in 2001 with the enactment of the Crop Disaster Insurance Act. The crop insurance program is handled by a public private partnership and is heavily supported by the government.

The crop insurance scheme is managed by the National

Agriculture Cooperative Federation (NACF). The NACF is reinsured on a quota-share basis with 6 local reinsurers. Only the liability in excess of 110% local market loss ratio and up to 180% local market loss ratio (150% after 2013) is transferred to the international reinsurance market. The government acts as the reinsurer of last resort for all the liability in excess of a 180% local market loss ratio (150% after 2013).

Fig: Crop Insurance in South Korea.



Source: Agriculture Insurance in Asia. Challenges in developing markets. Peter Book. Allianz Re Singapore. August 2017

## 5. Spain

One of the key characteristics of the Spanish Agricultural Insurance System was the setting up of a Pool in which all the insurance companies offering agricultural protection would operate. The Pool is managed by a service company, Agroseguero (SA). There are now Twenty Nine national & foreign private companies in Reinsurance

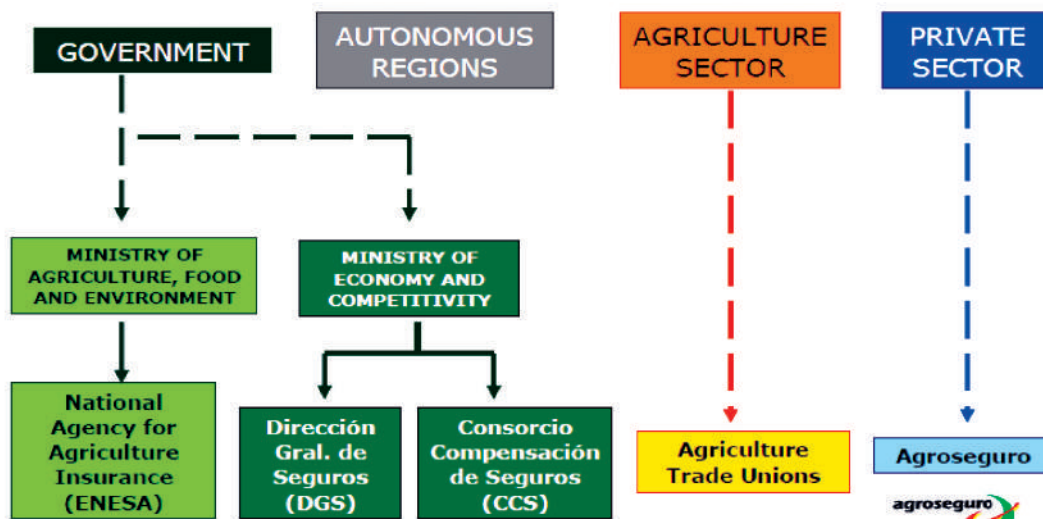
the pool. Thus 'risk' is assumed in a 'co-insurance' regime. The commercially run but publicly owned Insurance Compensation Consortium (CCS) is a member of the pool with a 10% of participation. Agroseguero acts as reinsurer for the Pool. There is no price / indemnity competition between members. Competition between

members is purely on service. As a Pool manager, Agro Seguro has the responsibility of pricing the products, drafting all insurance contracts and distribution of all contracts through the network of member insurance companies. On behalf of the Pool members, they oversee all loss adjustment and handle claims settlements. Agroseguro is also assigned for assumption of all agricultural risk from Pool members and distribution of all assumed risk back to Pool members in accordance with the share

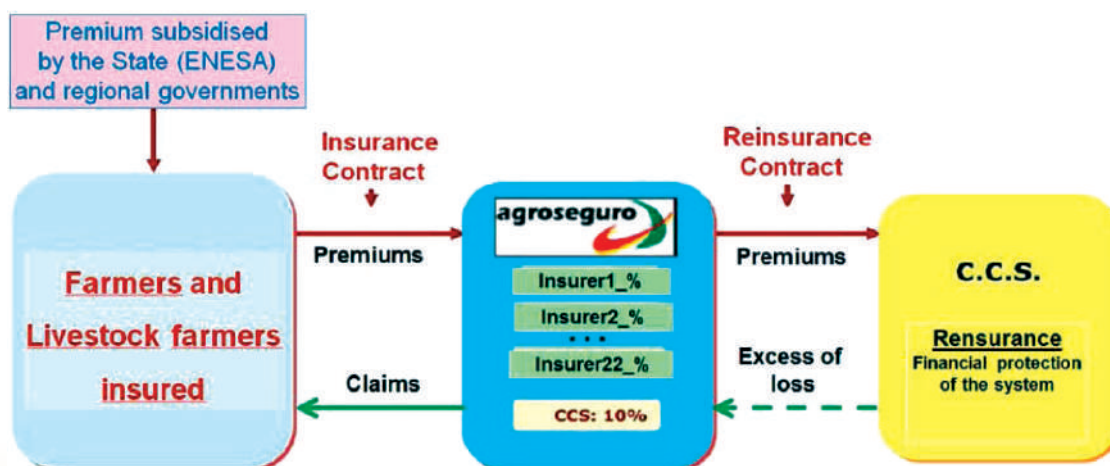
each member has in the Pool. There are two further control mechanisms to ensure premium rates are set correctly by Agroseguro and member company management expenses are controlled appropriately. One is through oversight from the Economy Ministry, who regulate the whole insurance sector, and the other is through oversight from the Farmers Union and ENESA. CCS acts as reinsurer of the Pool through an annually negotiated contract. CCS also has oversight of all loss adjustments, in order to

ensure the transparency and judicial safety of the system. In reinsuring AgroSeguro, CCS offers (Stop Loss) protection at two different rates dependent upon the needs of the member company. Those requiring a 'special' financial protection, (for whatever reason), pay a higher rate than those who do not. Pool members are required to approach CCS first for reinsurance coverage. Pool members also buy Stop Loss reinsurance for the coverage they need beyond that provided by CCS at a standard adjustable rate.

The Agroseguro framework is as under:



The following is the system's general operating pattern:



Reinsurance

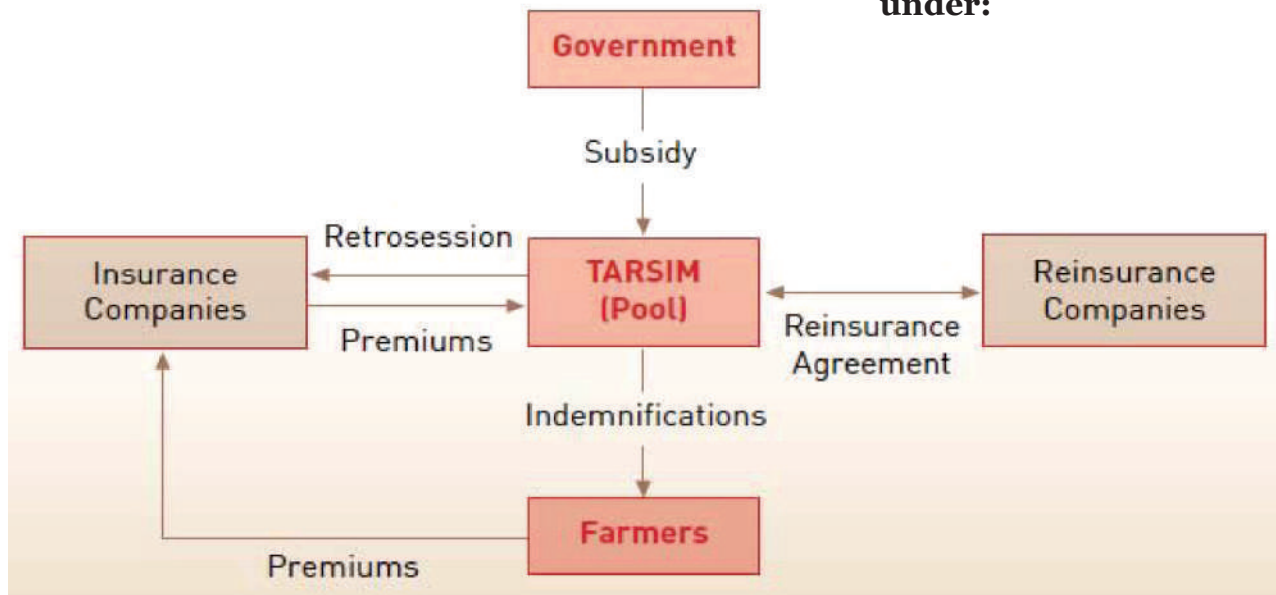
**Turkey**

As per the “Agricultural Insurance Act” passed in 2005, an Agricultural Insurance System was established wherein the Agricultural Insurance Pool (TARSIM) with public-private partnerships in

Turkey’s agricultural insurance sector was devised. By law, all agricultural risks insured are to be transferred to the pool (TARSIM) so as to allow for a standardized agricultural insurance product across the country, which means the conditions

for transferring risk are policed and it ensures centralized payment system for loss indemnification. Insurance companies can optionally take a retrocessional share from it.

**Broad framework of TARSIM is depicted as under:**



Entire premium is collected by the individual insurance companies, and the total risk is transferred to the Pool. The Pool is authorized to retrocede risks to insurance companies (voluntarily

participation). Where retrocession does not take place, reinsurance cover through domestic and international reinsurance companies is required. As a last resort, if the reinsurance

cover provided by domestic and international reinsurance markets is insufficient, the Government will provide Catastrophe Stop Loss protection.

**Various Risk Transfer/Financing Alternatives**



Other than the traditional insurance and Reinsurance, there are alternative risks transfer techniques which are being explored. The two solutions used are Alternative risk transfer and Catastrophe Bonds

**Alternative Risk Transfer (ART):**

Alternative risk transfer, also known as ART, enables companies to transfer risks to another party or to capital markets investors and thus receive protection against

certain risks the transactions aim to cover. ART solutions are tailor-made risk financing solutions and a key response to some of the limitations of the traditional insurance market and can help in three significant ways:



- 1) to self-finance risks which are not typically covered by a traditional insurance policy,
- 2) to transfer non-traditional risks and finally
- 3) to access alternative forms of capital which introduces competition and helps drive competitive pricing

The main areas of alternative risk transfer include risk securitization through catastrophe bonds, insurance-linked securities and reinsurance sidecars, trading of risk through industry loss warranties and weather derivative contracts and transforming capital market risks into reinsurance through transformer vehicles. Other techniques sometimes considered part of alternative risk transfer include Captive insurance companies, life insurance linked securitization, longevity risk transfer and other alternative risk financing techniques.

### **Catastrophe Bonds (Cat Bonds)**

Catastrophe bonds (also known as cat bonds) are risk-linked securities that transfer a specified set of risks from a sponsor to investors. Cat bonds emerged from a need by insurance companies to alleviate some of the risks they would face if a major catastrophe occurred, which would incur damages that they could not cover by the invested premiums. An insurance company issues bonds through an investment bank, which are then sold to

investors. These bonds are inherently risky, generally BB and usually have maturities less than three years. If no catastrophe occurred, the insurance company would pay a coupon to the investors. However, if a catastrophe did occur, then the principal would be forgiven and the insurance company would use this money to pay their claim-holders. Investors include hedge funds, catastrophe-oriented funds, and asset managers. They are often structured as floating-rate bonds whose principal is lost if specified trigger conditions are met. If triggered the principal is paid to the sponsor. The triggers are linked to major natural catastrophes. Catastrophe bonds are typically used by insurers as an alternative to traditional catastrophe reinsurance.

### **Major Challenges faced by Crop Reinsurers in India**

- Pricing: The premium rates are to be charged on actuarial calculations/methodology. However fierce competition among insurers result in premium rates that are not satisfactory to the Reinsurers in many cases.
- Claim Management: The claims are calculated on the basis of yield derived from the Crop Cutting Experiments (CCEs). As the CCEs conducted by the State Government machineries involve human intervention, it leads to delay apart from

moral hazard issues( both from Insured and Insurer side) in the data recorded.

- Anti-Selection and Moral Hazards: As the business comes from riskier locations.
- Data/Statistics: Insurers share the provisional business statistics with the Reinsurers from time to time. However, the actual business statistics reaches the Reinsurers only after the claims are finalized.
- Cash Flow: The premium subsidy share receipt is usually delayed by the governments which further affect the release of Reinsurance premium to the reinsurers. This delay has an impact in the cash-flow of the Reinsures.

### **Need of the Hour: Crop Insurance Pool in India**

- Individual companies have limited ability to retain. Risk -Pooling enables greater local retention. It enhances the underwriting capacity.
- A Pool could avoid inefficiencies in bidding Process in each State.
- Reduced cost of reinsurance due to risk diversification and risk consolidation
- Same underwriting standards and premium rates for all insurance companies
- Government support and coordination is much easier when dealing with

- Pooling will make the portfolio less volatile and more predictable.
- It helps to create a PPP (Public Private Partnership) model in Crop Insurance.

### Conclusion

With the issuance of the revised Operational Guidelines by the Ministry of Agriculture and Farmers'

Welfare (MoAFW), many of the challenges faced by the Reinsurers mentioned above have been corrected. Now, the Insurance companies are also focusing more on both Pricing and Claim Management at a larger scale. The premium under PMFBY is growing as the Government intends/ targets to insure 50% of the farmers in 2019-20 as against 30% of present level. There is going to be

greater demand for reinsurance capacity. It is going to be win-win situation for all the stakeholders. Crop Insurance with Reinsurance as backbone is a vehicle which is not only mitigating crop risks for farmers, but also helping in food security, protecting credit, alleviating poverty, enhancing farmer income, stabilizing Government fiscal volatility etc.

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## ‘Reinsurance - It’s evolution and role in the Indian Context’

**Mr. Sanjay Datta**

ICICI Lombard General Insurance Co.  
Ltd.

Reinsurance is the transfer of a part of the risk/portfolio that a direct insurer assumes by way of insurance contract to a second carrier, the Reinsurer, who has no direct contractual relationship with the insured. The reinsurance cover may be used for different purposes such as reduction of exposure to a single major risk, to cover catastrophe risk or to protect against major variations in the loss experience of entire portfolios. Reinsurance acts as a contingent capital for the insurers and recently is also being used by insurers worldwide to provide capital relief.

### **Evolution**

Reinsurance has its origin much after insurance in the 16<sup>th</sup> century globally with the need to spreading risk beyond local markets. It started with reinsuring individual risks (Facultative Reinsurance) and gradually developed into a portfolio protection for each class (Treaty Reinsurance). Further, the concept of excess

of loss reinsurance was introduced to protect portfolios against catastrophe hazards.

Reinsurance is the transfer of a part of the risk/portfolio that a direct insurer assumes by way of insurance contract to a second carrier, the Reinsurer, who has no direct contractual relationship with the insured. The reinsurance cover may be used for different purposes such as reduction of exposure to a single major risk, to cover catastrophe risk or to protect against major variations in the loss experience of entire portfolios. Reinsurance acts as a contingent capital for the insurers and recently is also being used by insurers worldwide to provide capital relief.

Reinsurance

### **Prior to Nationalization**

In India, prior to nationalization, there was very little reinsurance prevalent in the local market. The period from 1951 onwards was marked by a rapid growth of insurance business due to large scale economic development in the country. The branches of foreign companies in India were protecting their portfolios under global programmes and domestic companies had little need to purchase reinsurance owing to only small and medium risks in the portfolio. At that time, reinsurance was arranged from the foreign markets mainly British and Continental. For providing the reinsurance capacity in limited way, there existed an Indian Insurance Pool with members as local companies and purpose to share the business underwritten by each company to stabilize the result of market as a whole. In 1956, Indian Reinsurance Corporation, a professional reinsurance company was

formed by general insurers operating in India and it started receiving premium cessions from member companies. Apart from the pool, the government made it statutory in 1961 for every insurer to cede 20% in Fire and Marine Cargo 10% in Marine Hull and Miscellaneous insurance and 5% in Credit and Solvency business to approved Indian reinsurers, namely Indian Reinsurance Corporation and Indian Guarantee and General Company with the purpose to retain the premiums domestically to the extent possible. The above mentioned percentages were, to be allocated equally between the two reinsurers.

### **Post Nationalization**

The entire general insurance business in India was nationalized by General Insurance Business (Nationalization) Act, 1972 (GIBNA). Subsequent to the nationalization, the aforesaid companies were merged into the statutory entity, General Insurance Corporation of India (GIC) which was incorporated on 22 November 1972 under the Companies Act, 1956 as a private company for the purpose of superintending, controlling and carrying on the business of general insurance and continued to receive 20% mandatory cessions. The erstwhile general insurance companies were merged into four regional companies and were made wholly owned subsidiaries of the GIC,

making it the parent body to oversee the affairs of general insurance industry. GIC took the onus of arranging reinsurance protections for the insurance companies with a common integrated reinsurance programme to maximize the retention. In addition to the above, the tariff structure started operating in most of the classes to achieve a greater degree of homogeneity with reinsurance purchase limited to manage large/special classes of business.

### **Post Liberalization**

On 19th April, 2000, the Insurance Regulatory and Development Authority Act, 1999 (IRDA) came into force wherein the exclusive privilege of GIC and its subsidiaries carrying on general insurance in India was removed. In November 2000, GIC was renotified to have the sole function of national reinsurer and consequently GIC ceased to be a holding company of its subsidiaries. The ownership of the four erstwhile subsidiary companies and also of the General Insurance Corporation of India was vested with Government of India. The insurance industry was now responsible to arrange its own reinsurance protection.

### **Reinsurance Regulations**

IRDAI released the first set of reinsurance regulations on 14<sup>th</sup> July, 2000 with the objective of maximizing retention within the country, develop adequate capacity, secure the best possible

protection for the reinsurance costs incurred, and simplify the administration of business.

### **Regulation 10 of IRDA (Registration of Indian Insurance Companies) Regulations, 2000**

(Registration Regulation) laid down the mode and manner for making an application for carrying on insurance business in India. Every application was required to be accompanied by evidence of having rupees two hundred crore or more paid up equity share capital, in case the application for grant of certificate was for reinsurance business.

In order to support the transition, the mandatory cessions from the direct insurers to GIC was continued at 20% till 2006-2007. It was gradually brought down to 15% in 2007-2008; 10% in 2008-2013 and currently is at 5%. On October 25, 2017, GIC Re got listed on the stock exchange and is currently the 10<sup>th</sup> largest global reinsurer. With the industry maturing and recognizing the need to bring in more capital and innovation, the regulations were framed allowing foreign reinsurers to open branch offices in India.

IRDAI vide Insurance Regulatory Development Authority of India (Registration and Operations of Branch Offices of Foreign Reinsurers other than Lloyd's) Regulations, 2015 permitted registration and operation of branch offices of Foreign Reinsurers in India.

The overarching regulatory framework for the reinsurance of general insurance risks was laid down by the IRDAI (General Insurance-Reinsurance) Regulations 2016 (Reinsurance Regulations).

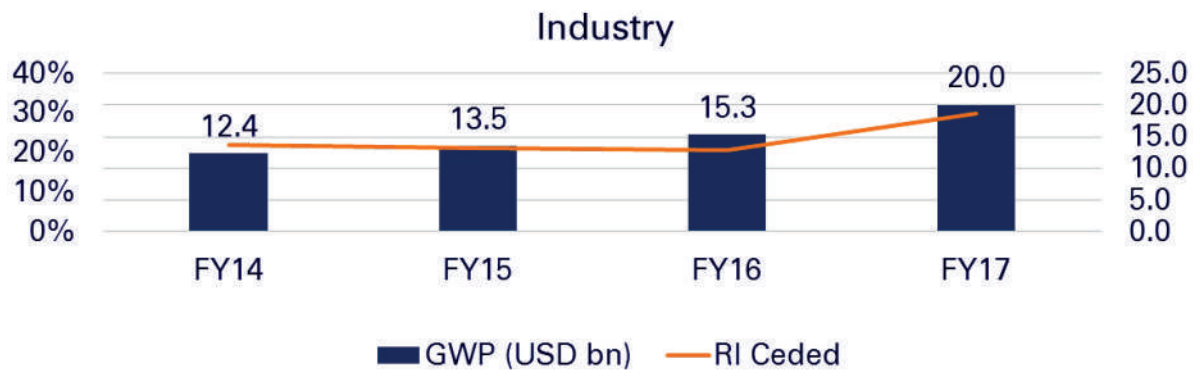
The guidelines prescribe in detail, the capital requirement and other compliances needed for opening a branch office in

India. Since Lloyds are structured in a manner different from the company markets, separate regulations were prescribed for it. Since then several foreign reinsurers have opened branch offices in India which include Munich Re, Swiss Re, Hannover Re, SCOR Re, XL Catlin, Gen RE and Allianz. Markel and Amlin have also opened branch

offices under the Lloyd's platform.

### Reinsurance Outlook

India is considered to be one of the important emerging markets for the reinsurers. Rapid industrialization and urbanization along with very low General insurance penetration (0.77% of GDP) provides a compelling investment case.



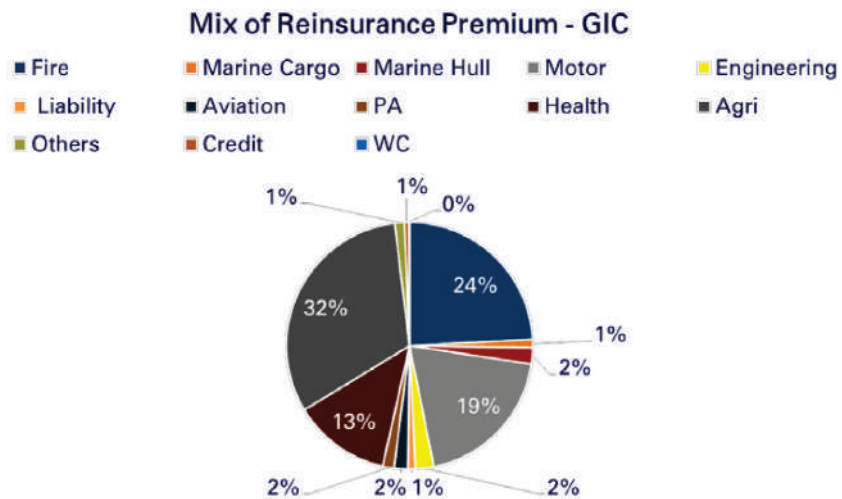
Graph 01: Reinsurance premium ceded % GWP

In terms of premium, the Indian reinsurance market grew at a CAGR of around 12% since 2009 with almost 30% of the total premium ceded to reinsurance market [Graph 01]. The increase was due to the robust growth posted by the insurance industry, which was aided by coming of new entrants in the insurance sector. In the recent past the bulk growth in the reinsurance premium has been contributed by the Agriculture portfolio.

Of the total reinsurance premium, treaty business accounts for over 85% while the balance is facultative reinsurance. In India, the personal lines business like Health and Motor are largely retained by the companies with some excess of loss

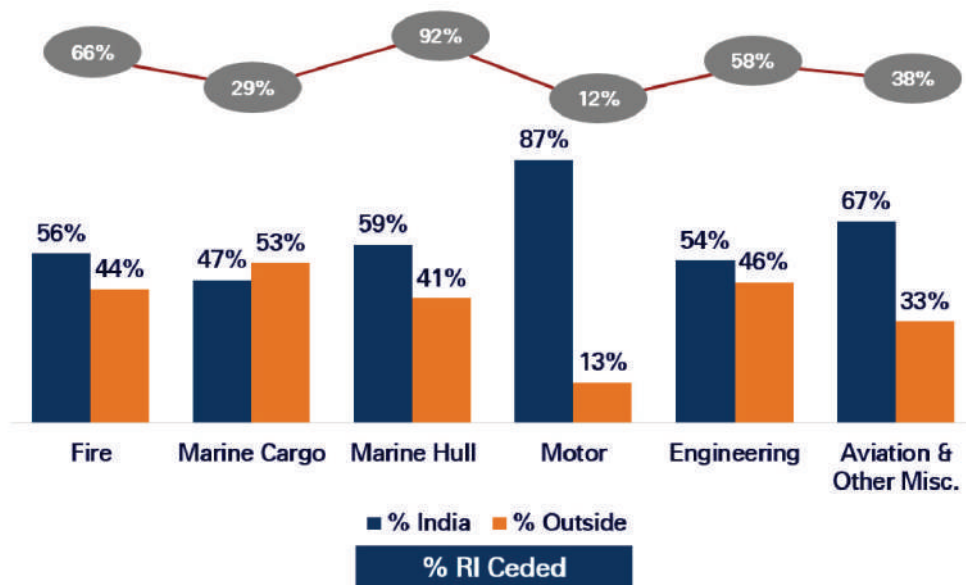
protection for large losses. The commercial lines business like fire and engineering and specialty lines like Agriculture, Liability and Aviation are more reinsurance dependent with both proportional and non-

proportional reinsurance structures in place. Due to this, the reinsurance ceding is not in line with product mix of general insurance market. An analysis of the portfolio of GIC Re for FY 2018 validates this point [Graph 02].



Graph 02: Mix of Reinsurance premium received by GIC, 2018

Further, the motor and health premiums are largely treaty driven and obligatory cessions to GIC and hence may not follow the Indian reinsurance market in general. A study of the total cessions for FY between India and outside India is given below [Graph 03].



Graph 03: Reinsurance ceding

However, with the operations of foreign branches getting stabilized over time, the premium retained in India is expected to increase further.

### Way forward

The role of reinsurance market traditionally has been to fuel growth and stabilize the primary insurance market which continues to be valid as economy is growing at 7% and creating more risks. Reinsurance will stimulate better growth in terms of concentration of risks. There is an incremental role to play by the reinsurance market depending on the class of business. Focus on innovation and technology solutions for personal lines such as Health, Motor, Home and more capital infusion to support infrastructure projects on dams, ports, roads and others largely under engineering and fire. With increased scope of insurance and changing

regulations such as RERA, there is an inherent need for newer and wider covers around cyber, liability, aviation, energy, unarmed vehicles etc., and thereby need of working collectively to develop risk and pricing models and enhance underwriting standards, pricing and wording of policies. The cedants' expectations have also evolved and they now look for not only capacity providers but also for risk partners as well.

The regulator continues to play an important role to evolve the market by further exploring regulatory frameworks and practices relating to reinsurance pools, Alternative Risk Transfer (ART) and such other mechanisms and make appropriate recommendations apart from attaining global best practices.

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# Cyber Insurance and Reinsurance Trends

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Cyber risks are omnipresent. As the WannaCry and NotPetya ransomware attacks demonstrated, the economic cost from business interruption and loss of data is now occurring on an unprecedented scale. With devices and machines becoming more interconnected, cyber threats are fast becoming the risk of the century.

With the ever progressive technology developments, new associated hazards and risks are surfacing – from cyber-attacks to intrusions. Cyber-attacks are now becoming more specialized, concentrated in nature, targeting all types of organizations, as well as individuals. The impact due to these incidents is also alarming – it spans financial losses, disruption of business operations, erosion of shareholder value and trust and reputational damage. The threat is so daunting that the question is not how or if an attack will happen, but when a company will discover that

it has been hacked.

Cyber risk is very dynamic with no geographic boundary. It qualifies among the top perceived threats to businesses globally. Cyber-attacks rank 3<sup>rd</sup> on list of Top 5 Global Risks in terms of likelihood.

(Source The Global Risks Report 2018 by World Economic Forum)

For instance, NotPetya (one of the most vicious of malwares) in 2017 severely impacted giants like Maersk, Merck, Saint Gobain, Mondelez. Globally it costed companies an estimated USD 1.2 billion. The insurance claims from Cyclone Harvey were USD 30 billion in 2017.

It was almost like an act of cyber war – the intention of the malware was purely destructive. It irreversibly encrypted computers' master boot records, the very part of the machine that tells it where to find its own operating system. Maersk had to reinstall their entire infrastructure with 4000 new servers, 45,000 new PCs,

2,500 applications.

According to public information, the impact on Cosmos Bank in India was to the tune of INR 94 crore due to malware attack on the banking systems which enabled nearly 14,800 fraudulent transactions.

Private individuals can become victims of cyberattacks just as easily as companies. India is the second largest online market, with 369 million internet users recorded in 2017. India is now ranked number one mobile data consuming country. While very few get reported, the number of Cyber-crimes committed in India is increasing steadily. According



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to the National Crime Records Bureau (NCRB), the motive behind these cyber-crimes is financial gain, gender exploitation and to cause disrepute. The risks outlined above are a significant threat for business continuity or cause of financial loss to an individual.

### **The Legal Environment for Cyber Crimes**

The primary law dealing with cyber-crime and e-commerce in India is based on the Information Act 2000. When it was formulated, the main intention was to provide legal framework for the promotion of e-governance and e-commerce in the country. The Act has 90 sections and sets out various cyber-crimes and their associated prescribed punishments. It was amended in 2008 to include sections related to electronic devices, digital data and cyber-crimes.

In IT Amendment Act, 2008, cyber security is exercised under sections 43 (data protection), 66 (hacking), 66A (measures against sending offensive messages), 66B (punishment for illegally possessing stolen computer resources or communication devices), 69 (cyber terrorism) among others.

India is yet to have a General Data Protection Regulation (GDPR) equivalent of its own, however work has started in this direction. In July 2018, Justice BN Srikrishna Committee submitted its report on Personal Data Protection to Minister of Electronics and Information Technology. The salient features of the report are:

- The law will have jurisdiction over the processing of personal data if such data has been used, shared, disclosed, collected or otherwise processed in India.
- Personal data collected, used, shared, disclosed or otherwise processed by companies under Indian law will be covered, irrespective of where it is actually processed in India.
- However, penalties will be defined for violation of data protection law. Just like GDPR, the penalties imposed will be up-to a fixed upper limit or a percentage of the total worldwide turnover of the preceding financial year, whichever is higher.
- The law defines, what qualifies as sensitive personal data which includes passwords, financial data, health data, biometric and genetic data.
- Cross border data transfer will be through model contract clauses with transferor being liable for harms caused to the principal due to any violations committed by the transferee.

### **Cyber security and need for Cyber Insurance – A market perspective**

Cyber security refers to methodologies and techniques adopted to protect the integrity of networks, programs and data from

attack, damage or unauthorized access. According to Forbes, the global cyber security market will reach around USD 170 billion in 2020. By 2022, cyber security ratings will be as important as financial credit ratings when assessing business relationships.

Given the fact that cyber-attacks are getting more and more sophisticated, companies will need to adopt a proactive approach to handle them rather than being reactive. People, processes and technology are the three main areas where companies need to focus when it comes to making their ecosystems cyber-secure. On a macro level, government, universities and industry need to get together to find a viable solution for cyber security at large, for the nation.

‘Cyber Insurance’ is now being used as a strategy by companies for addressing the risk but is still at a very nascent stage in India. It is offered as a standalone cover with first party and third party loss coverages or is also offered as an extension to the existing Casualty or Property policies. Given that the impact of Cyber-attack can be extensive, the recommended way is to cover the exposures as a standalone policy with exclusive policy limits and not tied-in with existing insurance programs. This would ensure that the potential impact on key risks such as Business Interruption, loss of revenue, legal expenses and many others can be considered



## Cyber security and need for Cyber Insurance – A market perspective

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comprehensively and appropriately.

Given the nature of Cyber risks, it is fair to say that every Non-life policy is potentially exposed to cyber risk. For instance – in the event that unauthorized access of machinery is taken in a manufacturing set up, this could manipulate the operating software, causing machinery breakdown which could result in fire, and in turn could set the plant on fire and damage neighbouring properties. Eventually there is physical damage to the property, business interruption and third party liability claims. Both the property and CGL policies can be triggered. These unassessed and/or unmeasured exposures under the conventional policies are now being termed as “Silent Cyber” which means cyber risks may or may not be specifically excluded or included are ambiguous, or unclear. These exposures need to be appropriately addressed by (re)insurers while underwriting and awareness needs to be raised amongst policy buyers.

Cyber insurance is also available for individuals with

two insurers offering such cover in India currently. It can provide indemnification to individuals for financial loss, legal costs, IT consultant fees and fees for psychology counselling services, if required, by an individual under scenarios such as unauthorized online transactions, online reputation damage, identity theft, phishing events and data restoration due to malware attack.

### Market Development

Cyber insurance demand is increasing exponentially in India. The number of buyers have increased by almost 50% in 2017 as compared to 2016. Premium-wise, it is about INR 200 crore market. This figure is expected to double in the next two years from now. The buyers initially were mostly large Tech companies which were buying large limit of indemnities but now the surge in demand is coming from Financial Institutions (especially banks, payment wallets), E-commerce, Hospitality, Multimedia and Advertising companies. The limit of indemnity on an average range from USD 5 to USD 20 million but there are also few companies buying limits as high as USD 100 million.

Since personal lines cyber is fairly new offering in the market, the growth is yet to be seen. The limit of indemnities range from INR 50,000 to INR 1 crore. These are products with predetermined premium and coverages with no individual underwriting requirements.

### Future Outlook

The ever-changing nature of cyber risks and exposures will

keep (re)insurers on their toes. The need is to keep innovating in terms of coverages which need to be customized and should address the requirements of the customers depending on the industries they are in. For example, the need of a manufacturing set-up is different from that of a financial institution purely because of the data sets they control and the business areas they operate in. There are still gaps in coverage being offered in the market and constant development in the offering is needed as the impact on clients expands and diversifies.

Also there is a need to manage the exposures and monitor the accumulation because a single event can impact multiple insured parties, as well as multiple non-life coverages.

Needless to say there is a huge business potential for the cyber insurance market. As awareness about cyber-attacks and their risks grows, more and more industry leaders are recognizing Cyber risks as a threat to their business operations and the need to protect themselves with cover. The times are over when a typical crime constituted a person being held up and robbed. In today's environment crime is far more complex: attacks like hacking may be unseen, but they certainly can have a significant and negative impact.

*Views expressed in this paper are author's personal only and not of the affiliating organisations*

# Climate Change - Modelling and pricing challenges

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Climate change is real and present. Endless human enterprise and the desire for comfort are driving up the emission of greenhouse gases (GHGs), which in turn are triggering changes in many climate hazards like hurricanes and floods. The mixture of heat, smoke and dust produced in land and carried over by winds forms an envelope over the seas, causing the seawater to become warm. Warmer water keeps the air warmer for longer, further energising hurricanes. Furthermore, some research suggests that climate change is weakening the natural atmospheric currents, which makes hurricanes stall and release a greater amount of water into the surface. This is the reason behind the increasingly frequent and stronger hurricanes, which are followed by heavier and prolonged downpours causing floods.

Increased global warming has also led to melting of polar ice caps and increasing sea levels,

which in turn has made storm surges even more devastating as higher volume of water is pushed inland. This rise in sea level can make tsunamis even more destructive. What's

Increased global warming has also led to melting of polar ice caps and increasing sea levels, which in turn has made storm surges even more devastating as higher volume of water is pushed inland. This rise in sea level can make tsunamis even more destructive. What's more, a team of 23 scientists who reviewed more than 3,000 peer-reviewed scientific papers has concluded that people worldwide could be forced to cope with three to six major hazards like rising temperatures, drought, heat waves, wildfires, precipitation, floods, powerful storms, sea level rise, etc... at once.

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India, with its population of 125 crore and counting, is no different. It is one of the most vulnerable countries to climate change. As per a study by the UN office for Disaster Risk Reduction (UNISDR), India suffered economic losses to the tune of USD 80 billion during the 20 year period from 1998-2017; primarily due to economic development, population growth, urbanization and increasing concentration of assets in areas vulnerable to climate change. We are continuously building in vulnerable zones exposed to risks of flood, cyclones and tsunamis. India's increasing

urban footprint means increased concretisation of the surface, reduced rainwater absorption capacity of the soil and more people living in flood prone areas. The planning and design is not in accordance with the pace of climate change. For example, drainage systems of the cities like Mumbai, Chennai, Bangalore and Gurgaon have been constructed based on historical data without considering the impact of climate change. Such infrastructure is often rendered ineffective during downpours leading to city floods.

Recent floods in Kerala have bared open a situation that can be best described as a “disaster-dilemma scenario”. As it rained heavily over a month, the dams across the state filled up and crossed the danger mark simultaneously. The dams were (probably) allowed to be filled initially to create adequate reserve of water in order to avoid a draught situation in the forthcoming months. However, to prevent bursting of reservoir walls in the wake of incessant rains, the gates of twenty-six dams had to be opened simultaneously, which caused the wide spread flood. Man-made factors like these are increasingly making “natural disasters” even more devastating.

Uncertainties associated with the increasing impact of climate change on natural catastrophes, man-made factors and soft market conditions make it a difficult challenge for reinsurance

underwriters to evaluate, model and price catastrophic excess of loss covers.

Pricing for such Act of God (AoG) perils is done based on modelled results. However, a question that remains unanswered is: are the models able to estimate the impact appropriately? Existing models use historical loss data of 100 years to arrive at a result. Nevertheless, increased frequency and severity of cat events in the recent years is making such modelled results ineffective. As a compromise, using a shorter period of 25-35 years is being considered by underwriters. Furthermore, in no way do such models cater to grey or black swan (extremely rare and unexpected) events, which cannot be ruled out. No model caters to the impact of the contributing ‘man-made’ factors on the natural disasters neither they can model ‘concurrent multi hazards’ effectively. India’s vast geographic spectrum and diverse Nat Cat exposures makes the problem even more challenging for underwriters. The ever-increasing build-up of properties and number of cars in cities combined with inadequate infrastructure and preparedness to deal with the heavy rainfall induced flooding is a sure shot recipe for disaster. No wonder then that the top Nat Cat events affecting Indian insurance industry are mostly floods in cities like Mumbai, Chennai, J&K and Gujarat. On the other hand, Kerala with its

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wide spread flood has had a limited impact on the Indian insurance industry. Sadly, there is no proper flood model for India yet, which means that the development of concurrent multi hazard models that capture insurers’ exposures adequately would take a longer time.

The perception of underwriters also plays a major role in pricing Nat Cat risks. Like common people having perceived sense of exposure but no experience, even underwriters pricing Nat Cat treaties believe that

The peril lurking round the corner could entirely be different: By the time India understands the requirement of wide spread Nat – Cat insurance in the wake of increased frequency and severity of cyclones-flooding along the costal belt or incidents of megacity flooding, the available capacity of reinsurance, the willingness of reinsurers to support such exposure may drastically reduce. Even if such capacity were available, it would come at a steep price.

the ensuing year shall pass without the need for a price change. This belief would change if reinsurance treaties were to be written on longer than one-year terms.

Continued soft market conditions with flood of capital in the reinsurance space has further compounded the problem, leaving little or no room for the increased uncertainty and margins. No wonder global events like Hervey, Irma and Maria or local events like Mumbai flood or even Chennai floods (2015) did not cast a significant impact on pricing.

This lack of proper pricing has forced prudent reinsurers to abstain from participation in

programs or bottom excess of loss layers that are highly exposed to such losses.

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The low uptake of insurance, especially disaster insurance in India is also attributable to the socio-economic and behavioural nature of the population. Despite the awareness, the motivation to buy insurance against Nat Cat perils is greatly jeopardised by the ‘it will not happen to me’ attitude of believers. In addition, the perception of disaster risks in the mind of people exposed to such risks is either abstract or so overwhelming that it creates fatigue or a sense of inability to prevent it if it were to affect them. For the extremely poor and vulnerable, who are living life on the edge, fending for insurance anyway is a matter of luxury. Penetration of insurance in such regions therefore continues to

remain negligible. Most often, when disaster strikes, it falls back on the shoulders of the government to cater to the relief, recovery and reconstruction efforts. Nevertheless, government should act as a reinsurer of last resort. Insurance and Reinsurance should be used as vital elements of disaster financing before opening up the government’s coffers for ex gratia payments or implementing a cess. Not just finance, but also an underlying disaster insurance system based on a PPP model can also tremendously boost disaster management, coordination, communication and mobilisation of resources, all with the objective of minimising the losses to life and property.

It is about time that India makes hay when the sun shines, and implements a Nat Cat Insurance Program, develops flood or multi-hazard models for cities to ensure adequate pricing and to cater to large event(s) in the future without threatening the existence of insurers. The development of a sound underlying technological system for disaster management would also boost this initiative.

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**Reinsurance Statistic as on March 2019 (Provisional)**

**Reinsurer-wise Business**

*INR in Crs*

SI No	Reinsurer/FRB	Indian Business							Foreign Business			Total Business
		Prop Treaty	N Prop Treaty	FAC	Total	Retroceded	% Retroceded	Retention %	Premium	Retroceded	% Retroceded	
1	Swiss Re	1875.49	359.16	39.19	2273.84	1047	46.05%	53.95%	2.49	1.05	42.05%	2276.33
2	Munich Re	1777.68	371.92	98.63	2248.23	859.54	38.23%	61.77%	36.85	31.59	85.72%	2285.08
3	Axa Vie	47.61	0	1885.4	1933.01	21	1.09%	98.91%	0	0	0.00%	1933.01
4	SCOR	1467.28	68.86	35.69	1571.83	722.4	45.96%	54.04%	0	0	0.00%	1571.83
5	XL Cat	161.35	96.11	48.04	305.49	56.7	18.56%	81.44%	7.97	0	0.00%	313.46
6	Hannover	459.81	149.54	13.53	622.88	289.1	46.41%	53.59%	0.18	0.07	38.85%	623.06
7	RGA	107.54	0	91.72	199.27	90.3	45.32%	54.68%	0.15	0.15	100.00%	199.42
8	Gen Re	186.7	1.97	5.7	194.36	40.35	20.76%	79.24%	0	0	0.00%	194.36
9	Lloyd's	0	0	1.24	1.24	0	0.00%	100.00%	0	0	0.00%	1.24
10	Allianz	0	0	94.45	94.45	42.36	44.85%	55.15%	7.82	0.13	1.66%	102.27
11	ITI Re	0	0	0	0	0	0.00%	0.00%	0	0	0.00%	0
	<b>Private Total</b>	<b>6083.46</b>	<b>1047.57</b>	<b>2313.58</b>	<b>9444.61</b>	<b>3168.75</b>	<b>33.55%</b>	<b>66.45%</b>	<b>55.46</b>	<b>32.99</b>	<b>59.47%</b>	<b>9500.07</b>
12	GIC Re	28422.99	1285.24	1198.15	30906.37	4068.51	13.16%	86.84%	13330.9	1171.82	8.79%	44237.27
	<b>Grand Total</b>	<b>34506.45</b>	<b>2332.81</b>	<b>3511.73</b>	<b>40350.98</b>	<b>7237.26</b>	<b>17.94%</b>	<b>82.06%</b>	<b>13386.36</b>	<b>1204.81</b>	<b>9.00%</b>	<b>53737.34</b>

Reinsurance









<b>23</b>	<b>Tata AIA Life</b>	<b>352.61</b>	<b>596.44</b>	<b>69.15</b>	<b>1489.01</b>	<b>2475.90</b>	<b>66.28</b>	<b>1.15</b>	<b>50811</b>	<b>75093</b>	<b>47.79</b>	<b>222740</b>	<b>349798</b>	<b>57.04</b>
	Individual Single Premium	2.11	61.01	2788.44	6.64	131.87	1885.04	0.42	38	623	1539.47	185	1409	661.62
	Individual Non-Single Premium	336.41	511.65	52.09	1396.73	2218.89	58.86	3.36	50765	74446	46.65	222476	348268	56.54
	Group Single Premium	0.00	8.00	255717.22	0.00	32.08	698790.87	0.03	0	0	NA	0	7	NA
	Group Non-Single Premium	14.01	15.11	7.84	85.19	87.06	2.19	2.25	5	4	-20.00	64	67	4.69
	Group Yearly Renewable Premium	0.07	0.66	852.59	0.44	6.00	1260.62	0.13	3	20	566.67	15	47	213.33
	<b>Private Total</b>	<b>10423.15</b>	<b>12682.48</b>	<b>21.68</b>	<b>59314.55</b>	<b>72481.17</b>	<b>22.20</b>	<b>33.76</b>	<b>1107187</b>	<b>1142661</b>	<b>3.20</b>	<b>6860602</b>	<b>7254556</b>	<b>5.74</b>
	Individual Single Premium	1151.13	1186.14	3.04	5218.32	7273.76	39.39	22.97	80570	39318	-51.20	277307	259949	-6.26
	Individual Non-Single Premium	5751.67	6833.47	18.81	35147.50	39397.27	12.09	59.68	1025688	1102421	7.48	6576132	6987362	6.25
	Group Single Premium	3052.19	3980.46	30.41	15276.31	21881.31	43.24	20.18	114	142	24.56	854	1016	18.97
	Group Non-Single Premium	87.89	106.05	20.67	692.64	399.48	-42.33	10.34	75	52	-30.67	599	494	-17.53
	Group Yearly Renewable Premium	380.28	576.35	51.56	2979.78	3529.35	18.44	74.83	740	728	-1.62	5710	5735	0.44
<b>24</b>	<b>LIC of India</b>	<b>18748.16</b>	<b>24776.87</b>	<b>32.16</b>	<b>134551.68</b>	<b>142191.69</b>	<b>5.68</b>	<b>66.24</b>	<b>4612895</b>	<b>4396535</b>	<b>-4.69</b>	<b>21338176</b>	<b>21433256</b>	<b>0.45</b>
	Individual Single Premium	2547.16	3580.30	40.56	26602.24	24393.55	-8.30	77.03	178335	174702	-2.04	1213172	1127538	-7.06
	Individual Non-Single Premium	4809.65	4682.22	-2.65	25141.61	26618.63	5.87	40.32	4431039	4217746	-4.81	20097526	20276367	0.89
	Group Single Premium	10963.27	13960.51	27.34	79850.99	86527.42	8.36	79.82	38	76	100.00	693	713	2.89
	Group Non-Single Premium	200.53	2346.17	1070.00	2083.37	3464.98	66.32	89.66	973	848	-12.85	3799	3288	-13.45
	Group Yearly Renewable Premium	227.55	207.68	-8.73	873.47	1187.12	35.91	25.17	2510	3163	26.02	22986	25350	10.28
	<b>Grand Total</b>	<b>29171.31</b>	<b>37459.36</b>	<b>28.41</b>	<b>193866.24</b>	<b>214672.86</b>	<b>10.73</b>	<b>100.00</b>	<b>5720082</b>	<b>5539196</b>	<b>-3.16</b>	<b>28198778</b>	<b>28687812</b>	<b>1.73</b>
	Individual Single Premium	3698.29	4766.44	28.88	31820.56	31667.31	-0.48	100.00	258905	214020	-17.34	1490479	1387487	-6.91
	Individual Non-Single Premium	10561.32	11515.69	9.04	60289.11	66015.90	9.50	100.00	5456727	5320167	-2.50	26673658	27263729	2.21
	Group Single Premium	14015.46	17940.97	28.01	95127.30	108408.72	13.96	100.00	152	218	43.42	1547	1729	11.76
	Group Non-Single Premium	288.41	2452.22	750.25	2776.01	3864.46	39.21	100.00	1048	900	-14.12	4398	3782	-14.01
	Group Yearly Renewable Premium	607.83	784.03	28.99	3853.25	4716.48	22.40	100.00	3250	3891	19.72	28696	31085	8.33

Note: 1. Cumulative premium upto the month is net of cancellations which may occur during the free look period.







<b>1.22</b>	<b>5747</b>	<b>14421</b>	<b>150.93</b>	<b>116234</b>	<b>155191</b>	<b>33.52</b>	<b>0.07</b>	<b>13818.70</b>	<b>25741.62</b>	<b>86.28</b>	<b>60378.84</b>	<b>135717.84</b>	<b>124.78</b>	<b>3.13</b>
0.10	0	0	NA	0	0	NA	NA	1.96	61.43	3026.82	12.70	134.23	956.97	0.38
1.28	0	0	NA	0	0	NA	NA	13788.34	24237.11	75.78	59719.86	126566.34	111.93	7.38
0.40	2	6576	328700.00	3	34336	#####	0.03	0.13	615.61	478972.84	-0.14	2790.38	-1944618.94	0.31
1.77	800	2684	235.50	64537	63601	-1.45	0.77	0.53	0.27	-49.62	29.59	28.95	-2.15	0.02
0.15	4945	5161	4.37	51694	57254	10.76	0.05	27.74	827.20	2882.53	616.84	6197.93	904.79	0.39
<b>25.29</b>	<b>19246949</b>	<b>24132872</b>	<b>25.39</b>	<b>125590537</b>	<b>168352325</b>	<b>34.05</b>	<b>74.94</b>	<b>375208.04</b>	<b>451914.81</b>	<b>20.44</b>	<b>2650203.05</b>	<b>3259324.06</b>	<b>22.98</b>	<b>75.21</b>
18.74	0	0	NA	0	0	NA	NA	4260.50	2997.83	-29.64	23169.19	21065.31	-9.08	59.44
25.63	0	0	NA	0	0	NA	NA	144624.81	183402.81	26.81	867080.08	1153453.55	33.03	67.29
58.76	11028134	15380725	39.47	58095776	101792061	75.21	99.85	87481.87	108397.78	23.91	587715.08	886867.15	50.90	99.86
13.06	734118	269708	-63.26	4375999	3375218	-22.87	41.04	28652.35	16362.08	-42.89	213564.55	105944.76	-50.39	84.27
18.45	7484697	8482439	13.33	63118762	63185046	0.11	55.19	110188.51	140754.32	27.74	958674.16	1091993.29	13.91	69.55
<b>74.71</b>	<b>13649137</b>	<b>8640417</b>	<b>-36.70</b>	<b>60542332</b>	<b>56300688</b>	<b>-7.01</b>	<b>25.06</b>	<b>310600.60</b>	<b>213202.45</b>	<b>-31.36</b>	<b>1231968.60</b>	<b>1074217.35</b>	<b>-12.80</b>	<b>24.79</b>
81.26	0	0	NA	0	0	NA	NA	3585.68	2146.00	-40.15	19506.80	14371.84	-26.32	40.56
74.37	0	0	NA	0	0	NA	NA	124863.57	119254.04	-4.49	528860.40	560759.87	6.03	32.71
41.24	34328	36883	7.44	629694	152981	-75.71	0.15	152.39	311.24	104.23	1045.74	1200.05	14.76	0.14
86.94	1028617	1229866	19.57	3934018	4848782	23.25	58.96	4014.79	4173.77	3.96	12323.94	19782.88	60.52	15.73
81.55	12586192	7373668	-41.41	55978620	51298925	-8.36	44.81	177984.17	87317.41	-50.94	670231.71	478102.71	-28.67	30.45
<b>100.00</b>	<b>32896086</b>	<b>32773289</b>	<b>-0.37</b>	<b>186132869</b>	<b>224653013</b>	<b>20.69</b>	<b>100.00</b>	<b>685808.64</b>	<b>665117.27</b>	<b>-3.02</b>	<b>3882171.65</b>	<b>4333541.41</b>	<b>11.63</b>	<b>100.00</b>
100.00	0	0	NA	0	0	NA	NA	7846.18	5143.83	-34.44	42675.99	35437.15	-16.96	100.00
100.00	0	0	NA	0	0	NA	NA	269488.38	302656.84	12.31	1395940.47	1714213.43	22.80	100.00
100.00	11062462	15417608	39.37	58725470	101945042	73.60	100.00	87634.26	108709.01	24.05	588760.82	888067.20	50.84	100.00
100.00	1762735	1499574	-14.93	8310017	8224000	-1.04	100.00	32667.14	20535.85	-37.14	225888.49	125727.64	-44.34	100.00
100.00	20070889	15856107	-21.00	119097382	114483971	-3.87	100.00	288172.68	228071.73	-20.86	1628905.87	1570096.00	-3.61	100.00

INSURANCE REGULATORY AND DEVELOPMENT AUTHORITY OF INDIA							
FLASH FIGURES – NON LIFE INSURERS (Provisional & Unaudited)							
'GROSS DIRECT PREMIUM UNDERWRITTEN FOR AND UPTO THE MONTH OF MARCH, 2019							
(Rs. in crores)							
S.No.	INSURER	For The Month of MARCH		Upto MARCH 2019		MARKET SHARE UPTO the Month Of March, 2019 (%)	GROWTH OVER THE CORRESPONDING PERIOD OF PREVIOUS YEAR (%)
		2018-19	2017-18	2018-19	2017-18		
1	Acko General Insurance Limited	22.60	0.69	141.15	0.92	0.08	15,242.39
2	Bajaj Allianz General Insurance Company Limited	1,021.17	846.30	11,058.96	9,445.22	6.50	17.09
3	Bharti AXA General Insurance Company Limited	230.42	188.49	2,258.87	1,753.58	1.33	28.81
4	Cholamandalam MS General Insurance Company Limited	470.16	343.91	4,428.14	4,102.48	2.60	7.94
5	DHFL General Insurance Limited	12.94	35.50	243.06	141.08	0.14	72.29
6	Edelweiss General Insurance Company Limited	8.26	1.17	92.55	1.30	0.05	7,019.23
7	Future Generali India Insurance Company Limited	334.88	172.13	2,554.01	1,906.38	1.50	33.97
8	Go Digit General Insurance Limited	480.67	48.22	1,204.98	93.74	0.71	1,185.45
9	HDFC Ergo General insurance Company Limited	728.36	652.22	8,612.85	7,289.97	5.06	18.15
10	ICICI Lombard General Insurance Company Limited	899.44	855.62	14,488.23	12,356.85	8.52	17.25
11	IFFCO Tokio General Insurance Company Limited	906.33	1,004.76	7,002.00	5,631.89	4.12	24.33
12	Kotak Mahindra General Insurance Company Limited	36.29	22.68	301.11	185.39	0.18	62.42
13	Liberty General Insurance Limited	101.00	83.53	1,125.00	816.53	0.66	37.78
14	Magma HDI General Insurance Company Limited	125.26	66.34	970.11	526.69	0.57	84.19
15	National Insurance Company Limited	2,146.76	1,588.53	15,178.23	16,193.55	8.92	(6.27)
16	Raheja QBE General Insurance Company Limited	19.13	14.56	115.96	83.45	0.07	38.96
17	Reliance General Insurance Company Limited	511.79	423.70	6,191.03	5,069.08	3.64	22.13
18	Royal Sundaram General Insurance Company Limited	283.03	255.99	3,172.63	2,623.44	1.87	20.93
19	SBI General Insurance Company Limited	735.80	485.78	4,706.55	3,544.20	2.77	32.80
20	Shriram General Insurance Company Limited	284.76	245.12	2,356.35	2,100.76	1.39	12.17
21	Tata AIG General Insurance Company Limited	663.92	563.63	7,742.66	5,435.92	4.55	42.44
22	The New India Assurance Company Limited	2,550.64	2,533.69	23,910.77	22,718.76	14.06	5.25
23	The Oriental Insurance Company Limited	1,566.82	1,238.68	13,246.31	11,452.05	7.79	15.67
24	United India Insurance Company Limited	1,587.88	2,091.61	16,384.60	17,429.95	9.63	(6.00)
25	Universal Sampo General Insurance Company Limited	129.61	509.12	2,830.92	2,310.86	1.66	22.51
	<b>General Insurers Total</b>	<b>15,857.92</b>	<b>14,271.97</b>	<b>150,317.03</b>	<b>133,214.04</b>	<b>88.36</b>	<b>12.84</b>
26	Aditya Birla Health Insurance Company Limited	76.32	34.90	496.80	243.17	0.29	104.30
27	Apollo Munich Health Insurance Company Limited	345.17	271.42	2,196.92	1,717.51	1.29	27.91
28	Cigna TTK Health Insurance Company Limited	55.06	50.63	484.82	346.40	0.29	39.96
29	Max Bupa Health Insurance Company Limited	136.95	110.13	947.14	754.47	0.56	25.54
30	Religare Health Insurance Company Limited	165.40	143.18	1,825.57	1,091.61	1.07	67.24
31	Star Health & Allied Insurance Company Limited	954.84	814.85	5,413.48	4,161.11	3.18	30.10
32	Reliance Health Insurance Limited	1.88	NA	4.09	NA	0.00	NA
	<b>Stand-alone Pvt Health Insurers</b>	<b>1,735.62</b>	<b>1,425.11</b>	<b>11,368.82</b>	<b>8,314.27</b>	<b>6.68</b>	<b>36.74</b>
33	Agricultural Insurance Company of India Limited	272.72	655.63	7,178.21	7,893.39	4.22	(9.06)
34	ECGC Limited	148.27	155.79	1,247.54	1,240.39	0.73	0.58
	<b>Specialized PSU Insurers</b>	<b>420.99</b>	<b>811.42</b>	<b>8,425.75</b>	<b>9,133.78</b>	<b>4.95</b>	<b>-7.75</b>
	<b>GRAND TOTAL</b>	<b>18,014.53</b>	<b>16,508.50</b>	<b>170,111.60</b>	<b>150,662.09</b>	<b>100.00</b>	<b>12.91</b>

Note: Compiled on the basis of data submitted by the insurance companies  
NA: Not Applicable

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