# Alternative Risk Transfer

# A New Dimension and Technology of Insurance

*R.C. GURIA*

Though the insurance is the principle and process of risk management and spread of risks, the revolutionary development of insurance operation today has given birth to new concept and character of insurance operation through the new technology of ART (Alternative Risk Transfer). This article highlights certain concepts of ART in insurance industry.

The world Insurance history can be traced in Emperor Hamurabi's Babylonya 3000 years B.C in the primitive form of Marine Insurance through contracts providing security to the traders undertaking risks of importing goods from Eastern countries like India, China, etc. during the then globalised trade period .

In India Insurance history is traced in 1000 years B.C. in the form of the practice as recorded in the Manusmruti – the social code of ancient India. But Insurance practice 3000 years ago has been transformed into new dimension and technology (ART) today.

Insurance Industry which is the offspring of socio-economic, political and technological evolution of human society has become the subject matter of discussion, debate and deliberation for all segments of the society today in India after liberalisation of Indian Insurance sector and formation of insurance regulatory body ie IRDA.

Before that this sector was monopolized by Govt. of India for about 3 decades.

*The author is member of the Institute. He can be reached at guriarc@vsnl.net*

At present about 16 MNCS and private players are competing with the state-owned insurance companies in India bringing the total transformation of Indian Insurance Industry.

Despite the total transformation Indian Insurance has been still lagging behind in comparison with the world wide insurance development which has brought the convergence of insurance markets with money markets and capital markets..

The service sectors like banking and insurance have been prepared for the world over fundamental economic changes with new mechanism or technology called Alternative Risk

Transfer Technology (ART) to combat with the incidence of costly catastrophes insurance losses which cannot be covered by the traditional technology of insurance and reinsurance. The incidence of unlimited catastrophe insurance loss has made the underwriters look for Alternative Risk Transfer technology to create more capital and more financial strength. So the insurers, Bankers and investors have come together with their respective roles in the risk transfer technology for their mutual benefits. Crossing over their traditional boundaries of underwriting, banking and investment they have come down to the road of alternative risk transfer process for their success and survival.

## Background of ART

The earthquake, hurricane and other natural catastrophic Perils and their ever- increasing exposures have brought some revolution and break through in the Traditional or conventional Reinsurance practices for the purpose of increasing the financial capacity to cover these unexpected uncontrollable, unlimited catastrophic exposures. The countries like Japan, Mexico, California and many European countries felt the serious need of finding out Alternative Reinsurance arrangements to match the cata exposures which had gone for beyond the capacity of Insurance, Reinsurance, Retrocessin and the Network Activity. The inadequacy of the so-called conventional Reinsurance arrangements gave birth to the alternative Risk Transfer products like **1. Swaps,**

**2. Bonds,**

**3. Options and**

**4. Securitisation**

through Special Purpose Vehicle (**SPV**). With these novel ART products the underwriters and Investors join their hands to bring the insurance markets to the capital markets for

their survival and growth in their respective fields.

## ART - The Scope and Operation

ART is the alternative and gradual process for transfer of local risk to capital Market --

1. Insured to Insurer;
2. Insurer to Re-insurer;
3. Re-insurer to Retrocession or

**Some of the catastrophe losses creating need of ART**

| ACT OF GOD | | | | MAN-MADE | | | |
|---|---|---|---|---|---|---|---|
| **Year** | **Country** | **Event** | **Losses** | **Year** | **Country** | **Event** | **Loss** |
| | | (US $ million) | | | | (US $ million) | |
| 1990 | Europe | Winter Stor | 9964 | 1992 | U S | Racial Riots | 993 |
| 1991 | Japan | Typhoon | 6906 | 1993 | U S | Bomb in WTC | 737 |
| 1992 | U.S | Hurricane | 19066 | 1993 | U S | Suburban Fire | 1183 |
| 1994 | U.S. | Earthquake | 14122 | 1996 | U K | Car bomb | 756 |
| 1998 | U.S. | Hurricane | 3622 | 1998 | Australia | Plant Explosion | 677 |
| 1999 | Europe | Winter Storm | 4500 | 2001 | U S | Terrorist Attack | 19301 |
| 1999 | Japan | Typhoon | 2980 | 2001 | France | Factory Explosion | 1085 |
| 2002 | Europe | Flood | 2500 | | | | |
| 2002 | US | Tornado | 1700 | | | | |
| *Source: Sigma -Feb., 2000.* | | | | *Source- sigma- March 2003* | | | |

4. Re-insurer to Capital Markets (through SPV).

ART brings the convergence of insurance markets with capital markets by way of securitisation, swaps, options bonds and so on. ART has brought a mix of Insurance and Reinsurance technology with Banking Technology of fund Transfer and Fund Management. In order to cope up the incidence of huge catastrophic losses and avoid their consequent insolvency, the underwriters keep on searching ART products for securitisation of Risks by transferring Risks in Insurance Market to investors in Capital Markets. These investors are neither insurance experts nor underwriters. They simply invest for Insurance risk through the capital market. Such Risk Transfer processes are long-term deals combining insurance deals and investment deals through special purpose vehicles.

Thus continuous experimentation, innovation and search for Alternatives have developed so many ART products bringing investors' money to the insurance market for property insurance especially Cata-Risks. Investors in ART products are Corporate Financial Institutions, Mutual Funds, Syndicate of Investors and Banks. Both Insurers and re-insurers need ART produces to protect Net Retained Exposure. The ART products help the Insurer and re-insurer to go beyond these normal financial capacity based on Equity and Free Reserves to undertake risks and transfer the excess through ART.The scope of ART can be better appreciated from the analysis of difference between reinsurance products and ART products :-

i) ART starts where the roads of traditional Reinsurance and Retrocessions end.

ii) Insurance and Reinsurance arrangements are annual contracts where ART products are long term contracts.

iii) Conventional Insurance or reinsurance is the process of risk underwriting or risk spreading while ART is the technology of Risk financing with a long term contract between investors and insurers or re-insurers for Risk financing through Bonds, Securitisation, Swaps Options etc.

**ART has brought a mix of Insurance and Reinsurance technology with Banking, Technology of fund Transfer and Fund Management.**

iv) Insurance or Reinsurance is a contract covering a specific and single risk but ART covers the entire portfolio of risk with adjustments and returns to the corporate investors.

v) Insurance and reinsurance arrangements are traditional for centuries while ART products are innovative and untraditional technology bridging the gap between the underwriters and the investors with additional financial strength for underwriters and returns for investors.

## Transaction, Structure of ART Products in the Western World

**1. Insurance Securitisation**

Insurance securitisation involves the process of transfer of property and casualty risks from one party who has assumed property and casualty risks (the issuer) to another party (the investors) with the issuance of a security (e.g.debt or preferred stock) the ultimate return on which is dependent on the occurrence of catastrophic events and the performance of reference index or the experience of reference portfolio of insurance or re-insurance company. So the issuer is a specially purpose re-insurer (SPR) which undertakes an insurance or re-insurance contract for the subject entity and then issues insurance- linked securities to fund its exposure under such insurance or re-insurance contracts. Some of the companies which have gone for insurance securitisation especially in USA, Europe & Asia are given below :-

1) Residential Re-insurance Ltd.
2) George Town Re Ltd.
3) SLF Re-insurance Ltd.
4) SR. Earthquake Fund Ltd.
5) Tokyo Marine & Fire Insurance Co. Ltd.
6) Trinity Re
7) Pecific Re Ltd. etc.

**Insurance Derivatives**

Insurance derivatives involve transfer of property and casualty

risk through the issuance of one or more derivative instruments based on standardised index or other reference base and corresponding futures and/or option contracts. Examples of Insurance Derivatives already used as ART products -

i) CBOT's complex of catastrophic options

ii) BCOE's similar products

Broadly speaking the derivative markets are usually broken down into three classes of products: **(a) Futures, (b) Options, (c) Swaps** Futures and Options are the oldest form of derivatives while swaps are of relatively recent phenomenon. The first currency swap was engineered in London in 1979. *There are different kinds of swaps in the markets :*

*(i) Fixed for floating swaps*

*(ii) Zero-Coupon for floating swaps*

*(iii) Basic Swaps*

*(iv) Putable Swaps*

*(v) Callable Swaps*

*(vi) Extendable Swaps*

*(vii) Amortizing Swaps*

*(viii) Asset based Swaps*

But in insurance market only limited number of Swaps are in use. Of late, insurance Companies and investors have become more and more equipped and used with derivatives deals and catastrophe Swaps. Insurance & Re-insurance markets are now making the more use of derivative technology and Catastrophe Swaps. For example, Swiss Re., recently applied Swap derivative technology more than traditional re-insurance form. They are also using Basic Swap Reinsurance deals.

## Catastrophe Bonds

Over the last 15 years or more the occurrence of large catastrophe events as mentioned earlier has brought drastic impact on Insurance and Reinsurance industry.

**The frequency of cata-events as mentioned earlier has led to introduction of Cata-bond as ART at first. In general, Cata-bonds are of three types:**

***(i) Bonds dealing with a single peril (as used by Tokio Marine & Fire Ins.***

***(ii) Bonds dealing with Hedging and multi-risks on Portfolio basis (as used by Hannover Re., St. Paul Re., F&G Re etc.)***

***(iii) Bonds dealing with single Peril with Index.***

However, Insurance companies and Reinsurance Companies are at present more comfortable with the use of Basic Swap than Catabond in the western countries.

## Evolution of ART Market in the West

In order to manage catastrophic insurance risk in 1992, Chicago Board of Trade (CBOT) opened the first ever exchange-traded insurance derivatives market. Since then the development of securitised and commoditised insurance risk and other capital market risk management innovatives and structures have proceeded steadily. The US Insurance Company started using insurance derivatives and securitisation as additional alternative methods for risk transfer as well as additional class of financial assets to be invested in. Since 1992 more and more insurers, re-insurers, brokers, bankers and investors have combined their intellectual and financial resources to the convergence of the insurance markets and capital markets and the development of new Risk Transfer Technology called Catastrophic Bonds and many other exchange-traded insurance derivatives. But these (OTC) instruments could not match or cover much many important aspects such as-

(i) Immediacy, (ii) Price transparency, (iii) Clearing Lease Guarantee & (iv) Security of Returns. It is why the investors, underwriters and exchanges continued to improve and introduce these insurers risk management instruments/tools.

The latest exchange-traded structures including the CBDT's (Chicago Board of Trade) proposed single event catastrophic Options. USA has witnessed second generation ART products -- OTC Derivatives, Catastrophe Swaps and Life Insurance securitisations and European countries are now using capital markets to secure reinsurance capacity.

In Japan both earthquake and storm risks are being securitised. Securitisation process has been stepped upto predictable lines of business such as life insurance risks in many European countries allowing insurance companies to off load mortality liability and expense fees and widening the

scope and participation of investors for various high risks portfolios. Commercial and investment banks have entered into the insurance sector focusing on and structuring distribution channels of the insurance products and affecting insurance and reinsurance intermediaries.

**In the last 5 years many other exchange based initiatives and innovations of ART have been created in the line of CBOT.**

1) ***In 1996 the New York Insurance Development Authority approved the Catastrophe Risk Exchange (Catex) as re-insurance intermediary.***
2) ***In 1997 Bermuda Commodities Exchange (BCOE) started its operation to trade insurance options similar to those products traded at CBOT.***

Though a lot of Exchange based products of ART have been developed over the decades in the western countrires the markets are still in their infancy or developing stage.

The BCOE and the BCOE Clearing Corporation were created as the result of an original venture and initiative taken by AIG, Guy Carpenter & Co., Chase Manhattan International Finance and other similar Insurance Corporates. The Bermuda Commodity Exchange (BCOE) options are more or less similar to CBOT's Catastrophe options.

CBOT & BCOE products differ with respect to the loss data contained in the index, option design and the management of options.

## Development of Alternative Risk Technology in India

ART products have not found significant place in Indian Insurance Industries, although Securitisation, Swaps, Derivatives-Options, Futures etc are in great use in other financial markets and Capital Markets.

Very recently IRDA is set to allow insurers to invest in interest derivatives to hedge risks in order to ensure that their future liabilities do not exceed their assets.

Traditionally the re-insurance operations are controlled and supervised by the Re-insurance Advisory committee, constituted under section 101B of the Insurance Act 1938. U/S 101A of Insurance Act, GIC has been notified as the national re-insurer.

At present Indian General Insurers do not find any much difficulty for re-insurance for protection against large catastrophe loss arising out of any single event as the single event has not turned to be as large as shown in the foregoing list of major losses in the Western countries.

But with the increasing operations of MNCs in this sector and full-fledged operation of BANCASSURANCE by General Insurance companies and introduction of Credit Insurance by State owned company like New India Assurance Company and prospect of Agriculture Insurance which has got the potential for Rs.50000crores in India there will be need of ART products in Insurance Industry in near future. Further, the capacity constraints, recent IRDA regulations on solvency margins for insurers and re-insurers, rising market expectations for more efficient risk financing programmes of insurers re-insurers and revolutionary development of Indian Capital Market to the world-class standard with all innovative Capital Market instrument and replacement of FERA by FEMA are all inducing factors for insurers, re-insurers, investors and bankers to make the proper use of essential ART products of transfer of insurance risks from insurance market to capital markets for wider capital base with minimum cost.

***All ART products like SWAS, Securitisation, Derivatives etc. will be widely used very shortly by Multinational insurance and re-insurance players operating in India for their perfect Asset-Liability Management (ALM) process. This new dimension and technology of insurance will provide chartered Accountants with the immense opportunity for their specialized profession. We need to develop our interest, requisite knowledge and skill to offer service in these areas.***

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