

# ***Risk-Based Capital Regime for Healthy Growth of the Insurance Industry***

***Vijay Dwibhashi\****

***A ship is safe in the harbour, but that's not what ships are made for***

*As the Indian Insurance sector enters the third decade since regulation of the insurance market, we are still young to realize the impact of solvency. At present, the insurance industry is following the constant factor-based solvency-margin organization model, there is a need to debate whether this formula applies even today, as the risks carried have evolved exponentially. The factor-based model is tantamount to painting everything with the same brush and with the same colour as well.*

*As the industry is still in its nascent stage, we may not have seen any company getting insolvent or nearing the red line, but the aim of this article is to make the reader realize the importance of solvency for the sector and so it is necessary to brainstorm on the effective methods to monitor and prevent such an eventuality. The web of interlinks between the insurance sector and the economy is also showcased to display how its stability is critical for the Indian economy.*

*Effectively, there are many models being implemented across the mature, as well as developing markets, and each model has its own merits and demerits. Comparative models are being implemented by various countries and their experiences vis-à-vis the Indian models are being evaluated. Currently India has realized that there is no need for major black-swan events or loaded rockets to test the models, but a microbial virus could significantly erode our capital and test our models effectively! The question is – Are we prepared enough?*

*Eventually, the article tries to convince the reader that there is a lot of scope in this sector and an effective movement from the factor-based model to a Specialized Risk Based Solvency Model (SRBS) will help bring much more maturity to the market along with the stability, it promises to its customers – come what may!*

***Keywords: Risk Based Capital (RBC) - Insurers - Indian insurance market,-  
Challenges,-Comparisons***

---

\* Chief Area Manager - Regional, Marine Underwriting & Claims, ICICI Lombard GIC Ltd., Bangalore.  
Email: vijaydwibhashi@gmail.com

The Indian Insurance market is one of the largest financial sectors in the world with a large portion of still untapped/untouched hinterland that attracts many players rushing to the arena. The premiums are increasing at a rate of around 11% compounded annually, whereas the insurance penetration is seen to be still slowly rising from 2.71 to 3.76% in 2019.<sup>[1]</sup> As per the “Economic Survey 2020-21”, the insurance penetration in life segment has shown a slight increase from 2.74% in 2018 to 2.82%. General insurance actually slipped to 0.94% from 0.97% in 2018.<sup>[2]</sup> This effectively means that the number of insured’s still remains the same, whereas the premiums are increasing for the same risk which is in fact an illusory growth. The basic principle of “law of large numbers” is making way to the philosophy of “robbing Peter to pay Paul”. We shall park this thought for some time and see how the implementation of the RBC will help resolve this dilemma.

### Risk Based Capital (RBC): A Quick Review

Presently the Indian regulators have adopted the Fixed Capital Standard of 150% as a primary tool for monitoring the financial health of the insurers. In this model, the insurers are required to maintain a fixed minimum ratio (same for all lines) towards capital adequacy - “Solvency I” model - regardless of the present financial condition of the company. Adherence to these minimum capital and surplus requirements ensure that the insurers are still licensed and can underwrite business in the country. However, with the increase in complexities and volumes of the risks being underwritten today, the model poses to be inadequate and outdated. The required capital is directly proportional to the business volume being underwritten with no consideration on the quality (or the lack of it) of risks underwritten or the corporate governance philosophies being undertaken by the insurers.

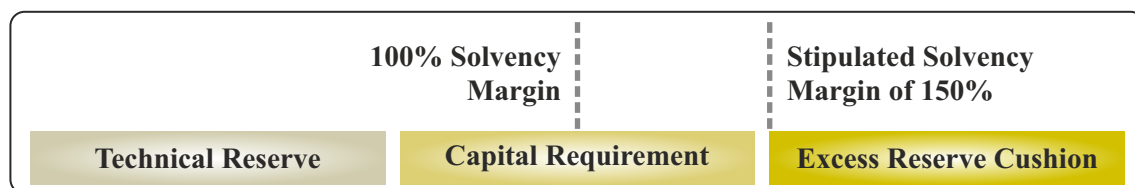


Exhibit 1. Solvency I Model

“Solvency I” model has its own set of merits, because:

- It is a successfully tested model
- It is quite simple and practical for calculating and administrating the reserves, validating or disclosing them to the shareholders.

[1] Indian Insurance Market Report of Insurance Regulatory and Development Authority of India (2022) - [https://www.policyholder.gov.in/indian\\_insurance\\_market.aspx](https://www.policyholder.gov.in/indian_insurance_market.aspx)

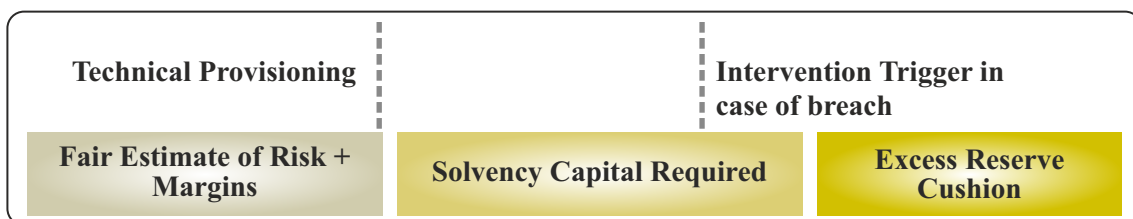
[2] Economic Survey 2020-21 - Government of India, Ministry of Finance - January 2021  
[https://www.indiabudget.gov.in/economicsurvey/ebook\\_es2021/index.html](https://www.indiabudget.gov.in/economicsurvey/ebook_es2021/index.html)

- The calculation process is quite transparent and does not have any surprise element attached to it.

However, the common challenges of this model are as follows:

- The standards set for all risks are the same. So basically, the same rules apply even when one underwrites a health/motor/marine business compared to a travel/liability or a property risk.
- It basically does not check the heavy discounting/expenses while underwriting the risk. Thus, it does not penalize the insurer who brings down the rates by the way of discounting.
- It does not incentivise a prudent underwriter for underwriting a risk in the most appropriate manner possible.
- It penalizes creation of higher reserves as they attract higher capital.
- There are no incentives for inculcating better risk management practices.

The current regime for capital requirement makes the Indian Insurance market “an Odd Man Out” when compared with other markets with Asia/worldwide. Other countries have mostly moved to the RBC either partially or fully and gone beyond.<sup>[3]</sup> Risk-Based Capital is a method of calculating the least amount of capital requirement for an insurer to support the overall business operations, considering the size and health/quality of their book. In other words, it also restricts an insurer from undertaking risks above their agreed limits. Thus, capital provides a better cushion to bounce back, if required. The RBC is intended to be a minimum regulatory capital standard and not actually the entire amount of capital that needs to be parked by the insurers to meet the safety and regulatory requirements. The RBC is one of the tools that can allow a regulator/supervisor to take over the insurer/s, if required, to ensure the safety of all stakeholders. Thus, this method can act as an early warning mechanism allowing insurers the scope of course correction before a major crash.<sup>[4]</sup>



**Exhibit 2. Risk Based Capital Model**

[3] KPMG Report on Making sense of solvency, capital and COVID-19 for the insurance sector.

[4] Capitalizing on change – Insurance Regulatory Risk and Capital Changes in Asia-Pacific – 17th East Asian Actuarial Conference, Singapore.

The RBC regime mandates the minimum amount of reserve required to be maintained by a company to avoid any surprise regulatory/supervisory intervention. The triggers can range from company action (internal, change in underwriting philosophy/strategies), regulatory action (prohibiting further sales/products), authorized control or mandatory control. At each step, the insurers can have a Plan B including – Capital infusion, building up capacity by adding re-insurance lines, changing the underwriting strategies, planning a merger/ acquisition.

The basic advantages foreseen by the implementation of RBC regime are:

- Incentivises better risk management
- Provides a timely warning and control mechanism
- Enhanced policy-holder protection

Moreover, adopting RBC helps India accelerate faster to the International Financial Reporting Standard (IFRS) as it fulfils the requirement to achieving the Market Consistent Valuation (MCV) standards, and in turn, it helps the government achieve the projected 5 trillion economy milestone. The Insurance Regulatory and Development Authority of India (IRDAI) in 2017 had appointed a steering committee in this regard to share their recommendations. Even the World Bank (WB) and International Association of Insurance Supervisors (IAIS) encourage movement to RBC models as it helps remove the regulatory arbitrage involved and bring more transparency to the processes. The ongoing pandemic situation has shifted the limelight from this for the moment, but once implemented, it will be a major reform for the insurance sector in India.

### Have Insurers Ever Failed?

In order to understand the need or importance of insurance, one should always try to understand the problems faced by people, who actually lack it. Thus, in order to understand the importance of solvency models and how these can help enhance the health of the industry, it is necessary to review the case studies of how and why some of the insurers went under. At this juncture, a detailed study interlinking insurance with the economy of a country is crucial to its understanding. If it fails, it will definitely take many players along with it, for sure.<sup>[5]</sup> The study of Insurance Company Insolvencies from 1969 to 1987, in order to Measure the Effectiveness of Casualty Loss Reserve Opinions, issued in 1990, highlights the facts:

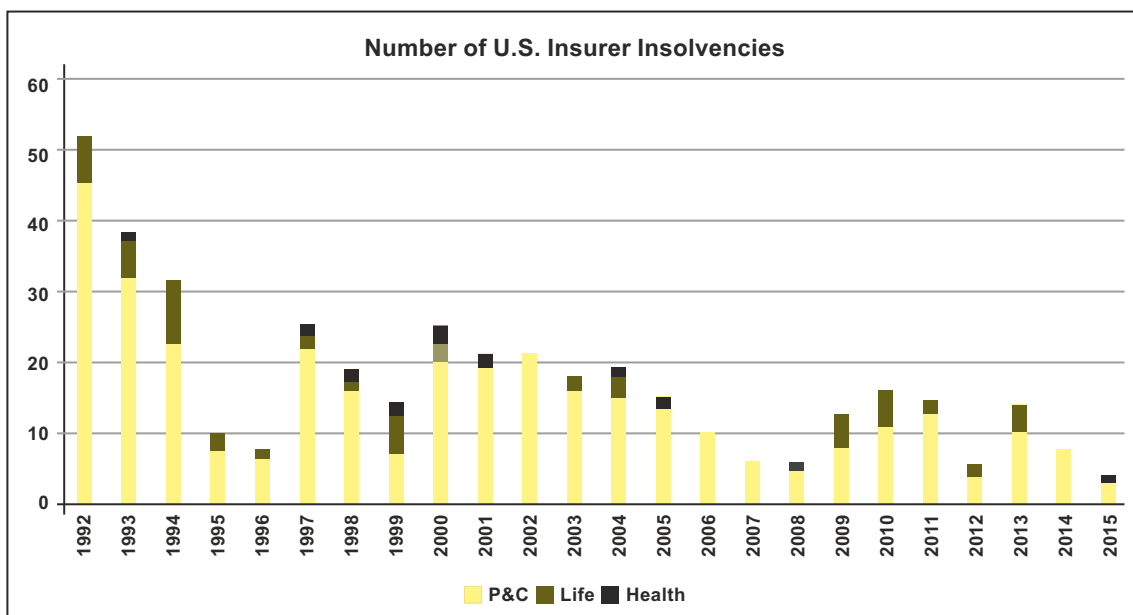
1. The major factor (48%) leading to the insolvencies of companies during the period of 1969-87 was “**Under-Reserving**” and the secondary cause, in the case of 34% cases,

---

[5] *Why Insurers Fail: The Dynamics of Property and Casualty Insurance Insolvency in Canada - The Geneva Papers*, 2008

was **“Mis-management”**. The following were the other reasons for failure in their descending order:

- a) Deficient loss reserving
  - b) Inadequate pricing
  - c) Rapid and significant premium growth during a short period of time proved to be problematic for the insurers
  - d) Alleged frauds
  - e) Overstated assets
  - f) Significant change in business
  - g) Reinsurance failures
  - h) Catastrophes
  - g) Imprudent investments
2. In majority of the 105 insolvencies studied, “no loss reserve opinion was taken
  3. Many of the loss reserve opinions, issued by qualified actuaries for companies that went insolvent, were either qualified or conditioned in some manner or the other.<sup>[6]</sup>



**Exhibit 3. Number of Insurers going Insolvent in US between 1992-2015.**

Sources: National Conference of Insurance Guaranty Funds (NCIGFs);  
National Organization of Life & Health Insurance Guaranty Association (NOLHIGA)

[6] Bankruptcy of Insurance and reinsurance companies in the US – Atlas Magazine

4. In most of the cases, the insolvent companies were in fact small, relatively new, and/or concentrated geographically and conducted one line of businesses only.
5. Financial risk factors are useful indicators for insolvency. The financial risk factors in the insolvent samples analysed, generally show that a greater proportion of them were in the higher risk brackets when compared to the total industry. The demographic risk factors analysed showed a less significant relationship between risk levels within the insolvent sample and the industry.

### **Famous cases of insurers going bust are as follows:**

1. **AIG** was severely affected by the 2008 financial crisis. After analysis, the authorities were questioned about their practices and corporate governance. A major restructuring plan that was implemented compelled the group to do away with some of their business assets and a few subsidiaries across the globe as well.
2. **Conseco**, an insurance company established in 1979, was estimated at 61.4 billion US\$ upon its bankruptcy in 2002. It went under mainly due to bad investments, including the acquisition of numerous companies in the 1990s, specifically the Green Tree Financial, which pushed it to bankruptcy faster.
3. **Executive Life Insurance Company** was the biggest bankruptcy reported in the United States in recent years. Based in California, the life company had to file for bankruptcy in 1991 following disastrous investments in junk bonds.

With the basic understanding of RBC, it can be seen that all the issues cited for insolvency by insurance companies are plugged/addressed by RBC Mode. Thus, we can move a step closer to trust that the adoption of the RBC regime will contribute to healthy growth of the Insurance Industry on a whole.

Although it will be a slight deviation from the topic, the subsequent questions could be - What if a company fails? What's the big deal about it? To understand the best answers to these queries, we have to study Exhibit 4, which aims at depicting the interdependency of the economy on insurance and banking sectors. It will never happen that the insurer will fall alone, and the actual ramifications of a fall will have a dire cascading effect across the country, if not abroad as well. It can be seen that the insurance sector also can have a dominant influence on market sentiments as well the purchasing power. The interlinking web is also shown in Exhibit 4, which depicts the spiral loop where insurance drives the economy and the economy drives the insurance, in-turn causing a domino effect.

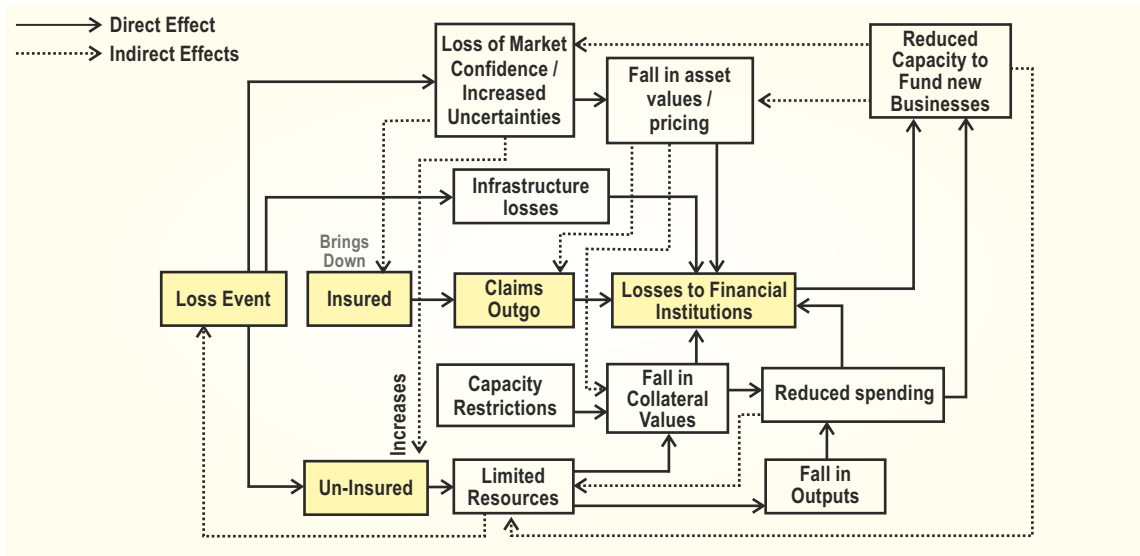


Exhibit 4. The interlinking cobweb of insurance and economy

### Major Risks to be provisioned

Any catastrophe involves loss and any risk undertaken, as per the latest risk management directive, requires assessment by insurers. For instance: <sup>[7]</sup>

- **Cyber security** - These poses as a major threat to all the insurers today. As the practices evolve, so too the counter mechanisms to bypass them appear. This leads to the necessity of constant vigilance and requires greater resources to counter them, hence the need for cyber security. However, the leakages/frauds are getting innovative every passing day with each counter-device/user posing as a potential gateway for further attack. The cyber and liability losses being long tailed, it requires higher provisioning of resources. The RBC model could help cater to this requirement promptly.
- **Climate Change** – The erratic and severe weather incidents are becoming frequent and normal occurrences these days. This risk has traditionally been one of the major challenges for insurers, if not the frequency and the intensity! The problem statement now being the increase in the frequency as well as the quantum of losses with each loss and almost every passing day.
- Thus, insurers face an increase in risks due to climate changes/uncertainties and intense global warming of late. Timely and substantial capital allocations are to be provisioned accordingly by suitably adjusting policies, prices and investment

[7] Actuarial Review of Insurer Insolvencies and Future Preventions Phase 1

decisions. An RBC regime is well equipped to cater to this dynamic risk scenario in a much more sustainable manner.

- **Aging Infrastructure** – As infrastructure ages along with increasing demand and use, insurers are exposed to new risks. The aging of infrastructure beyond upgradation, is a cause of losses in many fire insurance cases, damaging personal property, vehicles, hospitals, industries and a host of other properties. The risk-based framework helps factor these and incentivise new infrastructures in comparison to the earlier ones.
- **Regulatory Risk** – As new risks are emerging, the insurance regulators/supervisors are assessing and evaluating systems and procedures to bring in new risk regulatory measures that require a major revamp in the way insurers are conducting their business. This also mandates spending more resources on compliance requirements apart from the normal operations. Better regulatory provisioning would need lesser capital and thus incentivising the compliance in the RBC regime.
- **Declining Interest Rates** – Investment/s being a major source of insurance income, interest rate reduction is a major cause of concern for insurers. An interest rate drop can make insurance products less appealing, affecting sales and reducing premiums. The uncertainty and the timing of this risk make the problem a matter of grave concern.
- **Pandemic Risk** – Now this, being a new addition to the list of health risks is in the limelight 24/7 presently. Like a bolt from the blue, the world is now bombarded with a slew of unprecedented claims for which the insurance industry, to be very frank, was unprepared. The concern is not only to the life/health lines but surprisingly also causing losses in the property/casualty lines as well. This has caught everyone by surprise. The business interruption risks, errors and omission risk, advance loss of profit and allied incidental losses are also major causes of capital erosion.

A risk-based capital model can actually help cater to these ever-evolving risks effectively rather than getting complacent and applying short-term, ad-hoc (band-aid) solutions. RBC has the potential of acting as a booster for insurers across the globe.

The Risk based capital models assess the amount of risk capital required by using models such as:<sup>[8]</sup>

- Value at Risk Models (VaR),
- National Association of Insurance Commissioners (NAIC) models,
- Internal Formula based models.

---

[8] *Is Risk Based Capital way forward? Adaptability to Indian Context & Comparison of various market consistent measures - 29th India Fellowship Seminar*



The VaR metric looks at the worst-case scenario and probability of an insurer reacting to the ‘event’. The IRDAI Committee on RBC implementation recommends the calibration of capital requirement with a probability of ruin of 0.5% over a year’s outlook with correlation of matrix developed for aggregating and diversifying the risks in such calculated manner.<sup>[9]</sup> It also recommends a twin-basis approach during the initial phase – where insurers will assess the capital requirement, using both the existing model as well as the RBC model till all the stakeholders are confident that the model is working for the betterment of the health of insurance sector and not leading to or having any side/adverse effects.

A better understanding of how RBC is conducive to the betterment of the industry can be seen in the comparative table given below.<sup>[10]</sup>

Solvency I Model	RBC Model
calculated as the excess of value of assets over the value of liabilities	certain risk profiles are removed from their original categories and combine differently to form new categories
Required Solvency Margin = Maximum of <b>(RSM1 &amp; RSM2)</b> for each line of business individually. Here: <b>RSM1</b> = 20% of higher of the Gross Premiums multiplied by a <i>factor A</i> specified by IRDAI and the Net Premiums. <b>RSM2</b> = 30% of higher of the Gross Incurred Claims multiplied by <i>factor B</i> as specified by IRDAI & Net Incurred Claims	$= R_0 + \sqrt{(R_1^2 + R_2^2 + R_3^2 + R_4^2 + R_5^2)}$  <b>R<sub>0</sub></b> = basic risk capital <b>R<sub>1</sub></b> = investment model-based factor <b>R<sub>2</sub></b> = investment in equities & real estate <b>R<sub>3</sub></b> = 50% of the total RCB for credit risk <b>R<sub>4</sub></b> = R3 + RBC for reserving risk <b>R<sub>5</sub></b> = RBC for Pricing Risk
<b>Solvency Ratio</b> = Available Solvency Margin / Required Solvency Margin	The model is on the pretext that the factors under the square root are statistically independent of each other and correlates with the factor R0.
Minimum solvency ratio of 150%	Factor to be based on differential models and lines of businesses.

[9] General Insurance Council Data and Statistics <https://onlinemis.gicouncil.in/dashboard>

[10] Financial Meltdown & Insurance Does India Need A Risk Based Capital Model? by: Shri N.V. Subramanyam.

Thus, the risk-based model actually provides the insurers the flexibility to leverage on their investment practices, governance models, pricing strategy and credit risks involved. Additionally, it provides a higher degree of risk evaluation compared to the Solvency model 1. Thus, adherence to RBC will help insurers operate within the boundaries of their defined space with higher flexibility. It is also observed that the solvency ratios will increase with the same capital under RBC compared to Solvency Model I.

### Covid: A Test for Solvency of Insurers

The present pandemic scenario has pushed the implementation of RBC models to higher acceptance levels. A survey by PwC (PwC's inaugural Covid-19 CFO Pulse Survey) reveals the various challenges insurers foresee during the pandemic as shown in Exhibit 5.<sup>[11]</sup>

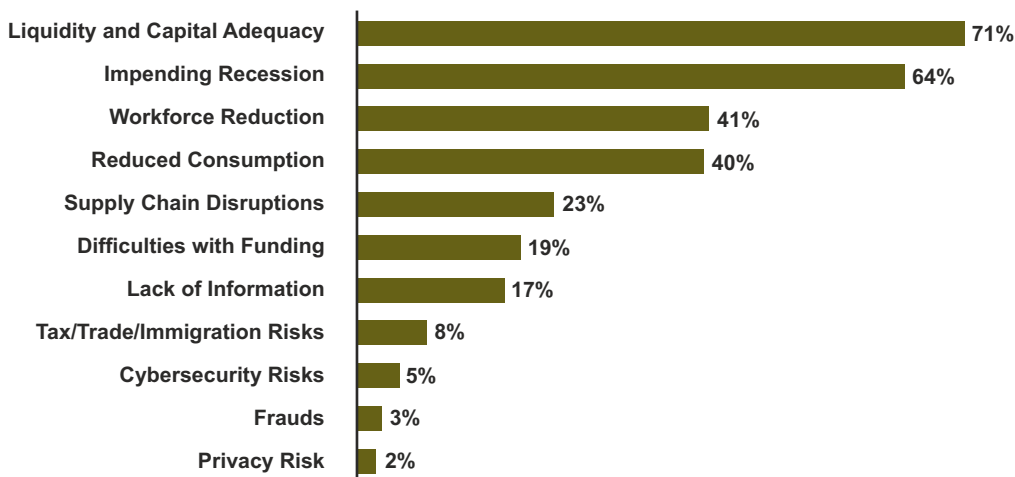


Exhibit 5. Top 3 concerns with respect to COVID-19?

### The Three Top Concerns with Respect to Covid-19

This pandemic has raised a major concern regarding solvency and valuation. The regulators across the globe responded to the situation and took measures in this regard, prompting many rating agencies to negatively change their industry outlooks. The current fluid situation confirms that the insurers are generally well capitalized; however, the solvencies have depleted considerably, not due to the pandemic but rather due to the financial shock it inflicted worldwide.

In the case of United States, the risk due to Covid-19 is more volatile not due to the health

claims but rather due to the Business Interruption (BI) Risks underwritten. The irony is that most of the BI policies underwritten excluded the risk (virus risk exclusion clause); however, they are anticipating legislations proposing the risks to be covered by the underwriters. Gradually we can see a large number of countries following suite.

The impact of Covid can be visualized based on the fact that globally the insurers are managing more than US\$ 20 trillion<sup>[11]</sup> in assets under its ambit and the major stresses to the assets today are attributable to :

1. Low interest rates
2. Downgrading bond rates
3. Credit and credit-spread risk
4. Equity market volatility
5. Underwriting losses

In this regard, various regulators have taken preventive actions as follows:

- **US** - advised caution while underwriting Business Interruption Risk.
- **EU** - differed the publication of solvency reports.
- **Italy** - agreed to apply lower trigger for country-specific volatility adjustments
- **Poland** - allowed to calculate quarterly SCR (under Solvency II) offering transitional measures on risk-free (discount) rates.
- **Hong Kong** – allowed discounted rates with higher averaging.
- **India** – The IRDAI cited the IMF projection of contraction in global output to be lower than during the 2008-09 financial crisis and OECD’s projection of contraction in global GDP growth rate by 2%, and, advised the boards of insurance companies to critically examine their capital availability and solvency margins as required for the financial year 2020-21. Further, it has also advised them to create strategies to provide adequate capital and ensure that resources are in place and for dividend pay-out for FY20 with the prudence mentioned above and rationalize and management expenses also<sup>[12]</sup>

The concerns related to the same is the anxiety of what’s in store for the insurers – what if the risks go the BI way further? The lessons from this pandemic should ideally help insurers focus more on their solvency to ensure better stability.<sup>[13]</sup>

---

[11] <https://www.7mileadvisors.com/the-insurance-market-and-the-impact-of-covid-19/>

[12] <https://www.peak-re.com/insights/risk-based-capital-and-the-indian-non-life-insurance-market/>

[13] 2019 Insurance Outlook Growing economy bolsters insurers, but longer-term trends may require transformation - Deloitte Centre for Financial Services

### Current Indian Market Scenario

In this section we will observe the present trends of the Indian Insurance companies and leave a few questions to be pondered over and judge how a Risk Basic Capital model will work for the benefit of the insurance sector.

### Segment-Wise Premium vis-a-vis Claims Analysis

Here we will observe the performance of private players, public sector units and specialized insurers by comparing their GWP's and claim data presented by General Insurance Council of India (latest data available as per 2019-20). This data, represented in the graph in Exhibit 6 below shows the huge differences in the book –p level underwriting and claims for the insurers and ask the compelling questions –

- 1) Is the process of applying the same solvency yardstick appropriate, and
- 2) Is it proving to be counterproductive by creating barriers to entry for smaller/lesser players and thus moving towards a market with only a few major players?<sup>[14]</sup>

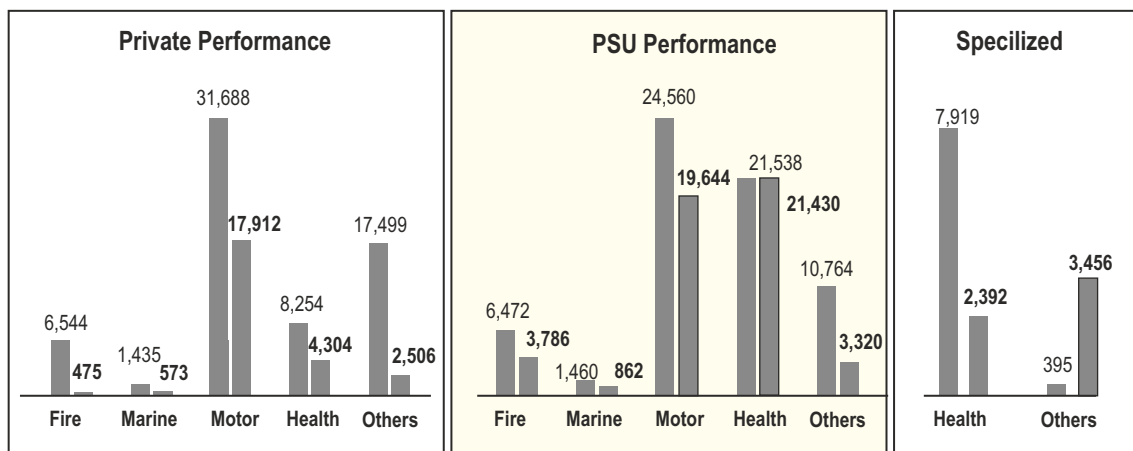


Exhibit 6. Performers of Insurers in India

This does indicate that the specialized health insurers are maintaining a very healthy book, whereas the same does not hold true for other products. Exhibit 6 suggests how the Risk Based Capital regime will be actually helping the stabilization of this situation and facilitates the smaller players more flexibility and capacity to innovate the risks better.

Grilling down to observe the segment-wise GWP for top players of general insurance companies, we observe that all the players have different strategies and underwriting philosophies to stay at the top. If one insurer has a balance across the segments, few are skewed towards a specific product along with the specialized insurers who concentrate

[14] IRDAI Reports and Committee reports

on a single line of business to remain be at the top. The questions one now needs to ask on observing Exhibit 7 (below) are:

1. Is the requirement of having a standard solvency ratio of 150% for all lines justified since insurers maintain different risks in their books?
2. Can a motor policy be treated at par with a long-tailed liability risk in the first place?

Using the RBC methodology, the situation can be addressed more effectively than the manner compared to the Solvency I models suggested.

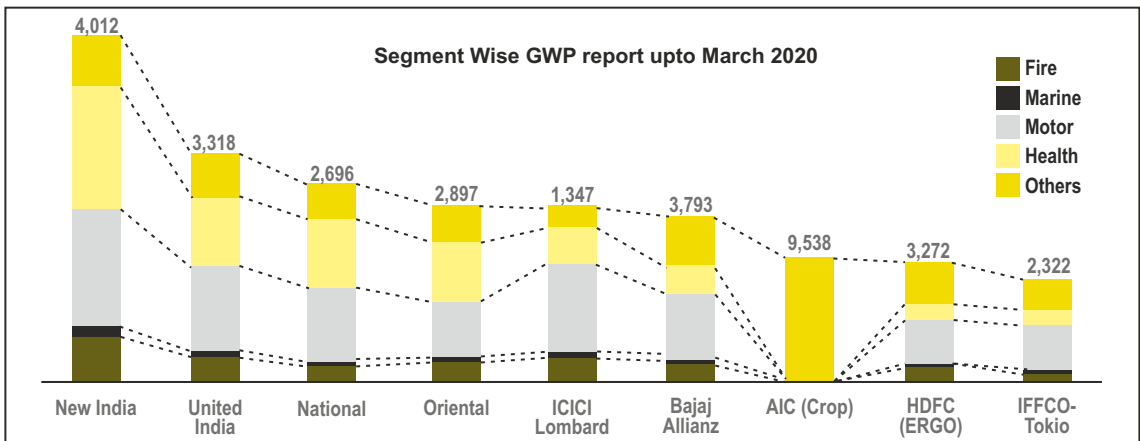


Exhibit 7. Segment Wise GWP report upto March 2020.

Further we observe that the premiums against losses for different states across India are as follows:

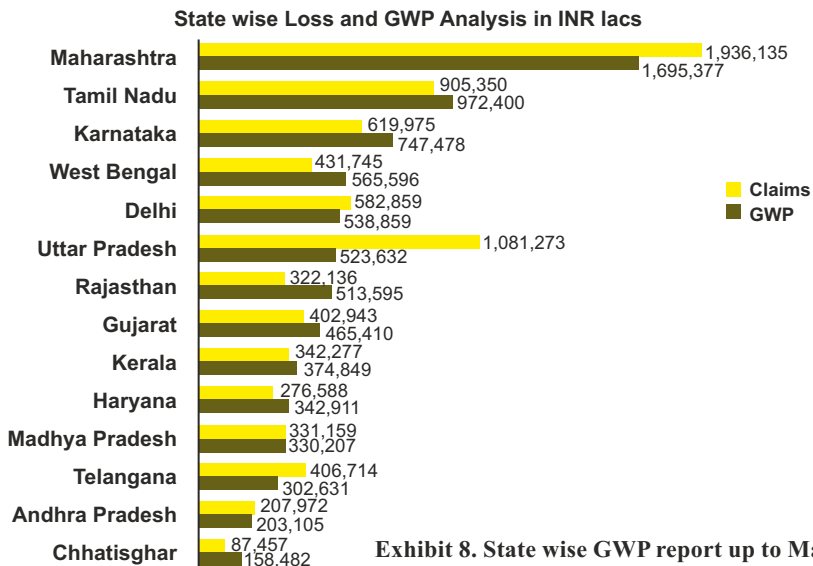


Exhibit 8. State wise GWP report up to March 2020.

From the study of the above Exhibit 8, we need to understand that whether states like Maharashtra, Uttar Pradesh, Delhi or Telangana should be treated on par with Rajasthan, West Bengal or Karnataka. The analysis can be compared on the bases of the East and West Coastal areas. A provisioning based on RBC can help insurers devise an innovative balance for each of the specific locations and add to the penetration effort rather than focusing on the preferred segments/locations and in turn compete on the premiums to procure business rather than innovate and have a risk-reward effort for sustained growth.

### Comparisons with Peer Countries

Finally we shall now observe the experiences of other Asian countries in tackling the reserving dilemma and their best case scenarios.<sup>[15][16]</sup> This table below points to the realization that the implementation of RBC has to be on priority basis<sup>[17]</sup> as we need to cover a large amount of ground at the earliest while other countries are galloping towards Solvency II and its upgraded versions already.

Country	Regulator	Reserving Approach	Remarks	Solvency %
<b>China</b>	China Banking and Insurance Regulatory Commission (CBIRC)	Risk Based C-ROSS	CBIRC is contemplating a revision in its C-ROSS model and is stated to release Phase II to update quantitative requirements	<b>100-150</b>
<b>Japan</b>	Financial Services Agency (FSA)	Risk based US Risk – Based	Moving towards economic value-based solvency regime. Field testing is underway	450-500
<b>India</b>	Insurance Regulatory and Development Authority of India (IRDAI)	EU Solvency I (Non- risk based)	Moving towards RBC regime	200-300
<b>Indonesia</b>	Otoritas Jasa Keuangan (OJK)	Risk Based	Moving towards RBC regime	450-500
<b>Malaysia</b>	Bank Negara Malaysia (BNM)	Risk Based	Current model implemented in phases since 2018 with focus on reviewing the prudential limits on assets and liabilities.	200-300
<b>Singapore</b>	Monetary Authority of Singapore (MAS)	Risk Based	Upgrading to RBC2 shortly	200-250
<b>South Korea</b>	Financial Supervisory Services (FSSs)	Risk Based US Risk-Based	Adoption of K-ICS, a principal based on RBC framework from 2022 along with IFRS17	250-300

[15] 2020: Insurance regulation in Asia Pacific Ten things to know about 20 countries

[16] The Global Framework for Insurer Solvency Assessment – A report by the Insurers Solvency Assessment Working Party of the International Actuarial Association.

[17] Milliman Research Report – Life Insurance Capital regimes in Asia – comparative analysis and implications of change – July 2019.

<b>Thailand</b>	Office of Insurance Commission (OIC)	Risk Based	RBC 2 with 95% confidence interval; presently with a target of adopting a model with 99.5% confidence level within 2 years after IFRS 17	300-350
-----------------	--------------------------------------	------------	--	---------

### So what are the challenges?

The challenges in implementation can be summarized as:

- **Classification of challenges** – The lines of business need to be further classified and sub-classified to ensure a better drill down of data and this requires a much more detailed analysis for both the insurers to innovate and regulators to supervise.<sup>[18]</sup>
- **Fresher’s dilemma** – A fresher always has a dilemma of how to start a new journey, but, more often than not, we see that the fresher develops into an expert on pity faster than expected. The Indian insurers are cast in the same situation with regards to implementation of RBC. The initial ice breaking is required to start the leap of faith in this case.
- **Loss triangles** – The complexity increases when the UW performance is to be gauged on “Accident-Year” basis for checking the book performance whereas the insurers expect the data analysis on underwriting year on basis. The problem becomes more acute when dealing with long-tail proposals like a liability policy.
- **Enormous data collection** – Data is the king in the RBC model and we need historical data to have a better understanding of it. Creating retrospective data models coordinating with different stakeholders, where data privacy among competitors is also challenging.
- **‘My Format vis-a-vis Your’s’** – Data integration/system compliance/streamlining data is not an easy feat to achieve.
- **RBC is based on assumptions** and the challenge is to streamline these assumptions scientifically with the best-case scenario. A small miss somewhere can be disastrous.
- **Fair valuation is easier said than done.**
- **Contract risk mapping** for evaluating the liability risk is a challenge which needs very high resources and time.
- **Discovering the magic number** - In Solvency I, atleast we have a known, tried and tested model with a specified threshold of 150%, but with RBC, we still have to find out that magic-mix of the right figure. In the quest for this elusive factor, we risk destabilising a stable model altogether. ‘A bird in hand is better than two in the bush’ is an old but wise proverb!

[18] 16. *Some Issues in Risk-Based Capital* by G. M. Dickinson, *The Geneva Papers on Risk and Insurance*, 22 (No. 82, January 1997) 76-85.

## Conclusion

With the observations and data collated, one can realize that the Risk Based Capital Models are a potential way ahead for the Indian insurance sector and will definitely help boost the health of the industry at large. Specialized additions to the risk-based model, centric to Indian geographical and physical needs, can allow insurers to innovate and push ahead to for further and deeper penetration of the market. Also, it can incentivize players for their credible sourcing philosophies and discourage a “rate race”. The big questions which still elude answers are: “how?” and “at what pace”. So,

- Will we be laggards if we drag our feet in this case or will we burn our heels if we tend to push it too fast?
- Will change/s in the model require a lot of disruptions on all fronts?

The pandemic has made one point - loud and clear - that one’s health and the internal immunity are the only life savers, and, from this realization, a parallel can be drawn for the Indian insurance industry. Risk-based capital is the vitamin booster shot which the insurance industry requires to take in order to develop resilience and immunity not only for fighting the present pandemic, but many more future challenges threatened by climatic change as well.

## References

- Indian Insurance Market Report of Insurance Regulatory and Development Authority of India (2022). [https://www.policyholder.gov.in/indian\\_insurance\\_market.aspx](https://www.policyholder.gov.in/indian_insurance_market.aspx)
- Economic Survey 2020-21, Government of India, Ministry of Finance, January 2021. [https://www.indiabudget.gov.in/economicsurvey/ebook\\_es2021/index.html](https://www.indiabudget.gov.in/economicsurvey/ebook_es2021/index.html)
- KPMG Report on making sense of solvency, capital and Covid-19 for the insurance sector.
- Capitalizing on change: Insurance Regulatory Risk and Capital Changes in Asia-Pacific, 17th East Asian Actuarial Conference, Singapore.
- “Why insurers fail: The dynamics of property and casualty insurance insolvency in Canada, *The Geneva Papers*, 2008, 33, The International Association for the Study of Insurance Economics, 1018-5895/08, 464-88. [www.palgrave-journals.com/gpp](http://www.palgrave-journals.com/gpp)
- Bankruptcy of insurance and reinsurance companies in the US, *Atlas Magazine*.
- Matson, Patricia, Actuarial review of insurer insolvencies and future preventions, Phase 1 : A review of root causes of insolvencies, *Risk and Regulatory Consulting*,



- “Is risk-based capital the way forward? Adaptability to Indian context and comparison of various market consistent measures, 29th India Fellowship Seminar. [www.actuariesindia.org](http://www.actuariesindia.org)
- General Insurance Council Data and Statistics. <https://onlinemis.gicouncil.in/dashboard>
- Subramanyam, N. V. (2009), “Financial meltdown insurance: Does India need a risk based capital model?” *The Business Analysis Journal*, July-December.
- <https://www.7mileadvisors.com/the-insurance-market-and-the-impact-of-covid-19/>  
<https://www.peak-re.com/insights/risk-based-capital-and-the-indian-non-life-insurance-market/>
- (2019) “Insurance outlook growing economy bolsters insurers, but longer-term trends may require transformation”, Deloitte Centre for Financial Services.
- IRDAI Reports and Committee reports. [https://www.irdai.gov.in/ADMINCMS/cms/frmGenera.l\\_NoYearList.aspx?DF=Creport&mid=12](https://www.irdai.gov.in/ADMINCMS/cms/frmGenera.l_NoYearList.aspx?DF=Creport&mid=12)
- Norton Rose Fulbright (2020), “Insurance regulation in Asia Pacific – Ten things to know about 20 countries”, *A Norton Rose Fulbright Guide*, January 1.
- “The global framework for insurer solvency assessment: A report by the insurer’s solvency assessment working party, The International Actuarial Association.
- (July 2019), “Life insurance capital regimes in Asia: comparative analysis and implications of change”, Milliman Research Report.
- Dickinson, G. M. (1977), “Some issues in risk-based capital”, *The Geneva Papers on Risk and Insurance*, 22, No. 82, January, 76-85.
- Hart, David, “Insurance Company Failure” by Roger Massey (Chairman), David Hart, James Widdows, Debbie Law, Kabari Bhattacharya, Wendy Hawes and Richard Shaw. <https://www.actuaries.org.uk/system/files/documents/pdf/insurance-company-failure.pdf>
- Dalmia, Rajesh (2018), “RBC: The building blocks of the framework, 6th Capacity Building Seminar in Health Care Insurance, Gurugram, August 2,
- Chen, Steven & Fishbaum, David, Risk-based capital development in India, The Oliver Wyman Report. Christian Sutherland-Wong & Sherris, Michael, “Risk-based regulatory capital for insurers: A Case Study.

