



India:

# Growth Opportunities on the Rise

SEPTEMBER | 2022



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## Growth opportunities on the rise

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## Executive Summary

The Indian market holds tremendous potential for insurance products, especially in segments that remain untapped. The market is evolving in terms of market penetration, product innovation, regulatory changes, government initiatives, capital adequacy and customer experience. Foreign insurers are an additional driver of growth. However, only a few foreign insurers have increased their majority stake beyond 49% in India. These aspects will govern the Indian insurance market's growth and set the context for the drivers of the ongoing market transformation.

In this report, we have highlighted insurance trends in India based on insights gathered from practitioners' interviews, available research and literature, with a particular focus on the enterprise risk management (ERM) function of insurance companies. The findings of this report indicate that ERM provides an opportunity for insurers to identify and mitigate existing and potential insurance risks and enhance their policies and implementation for better management of risks and internal controls. Also, given the relatively recent and gradual privatization of the insurance sector, as well as the shortage of actuarial experts, the ERM function at Indian insurance companies will continue to evolve.

The report is divided into three major sections, which discuss the impact of innovation and insurers' business and regulatory environments on the insurance industry and the ERM function.

1. **Innovation.** Artificial intelligence (AI), machine learning (ML), big data and the Internet of Things (IoT) have transformed the insurance industry in several ways, from new actuarial forecasts to business process automation and operational efficiencies. While the ERM function is not an enabler of innovation directly, it is involved in the process of identifying and mitigating potential risks. For example, underwriting and product innovation require the review of materiality and risk using in-house AI/ML models.
2. **Business environment.** To enhance the customer experience, digital channels and technology have been adopted to develop tailor-made products for customers, increasing their loyalty and retention. In some cases, insurers have tied up with fintechs and insurtechs for development of effective distribution channels, improvement of operational efficiency, and product management. The push from the government to increase foreign direct investments (FDI) has also widened the scope for increased efficiency and will continue to drive market consolidation, mergers and acquisitions, joint ventures, and strategic alliances with tech-enabled firms to push growth.
3. **Regulatory environment.** Since the establishment of the Insurance Regulatory and Development Authority of India (IRDAI) in 2000, the domestic insurance industry has become more liberalized, with ongoing efforts to modernize it, while protecting the interests of policyholders. IRDAI has also opened the market to foreign-owned companies via FDI. It also introduced a regulatory sandbox environment to administer innovation in a safe and responsible manner. The regulator has done transpositions (e.g., IFRS 17) to improve insurer solvency and enhance reporting via reporting standards such as Ind AS 117 on insurance contracts.

In this context, chief risk officers at insurance companies, ERM is turning out to be a cornerstone of dealing with complexities of the business environment and navigating the intricacies of innovation. Amid emerging risks and priorities, ERM policies, frameworks and processes are ensuring diverse representation from a variety of functional areas, especially stakeholders with diversified skills and technical knowledge to help in the risk discovery, scoring, tracking and mitigation process.

The authors of this report have included key insights from the practitioners interviewed in each section. At the end of the report are notes on the conclusions and methodology and further details on the insurance practitioners who participated in the interview process.



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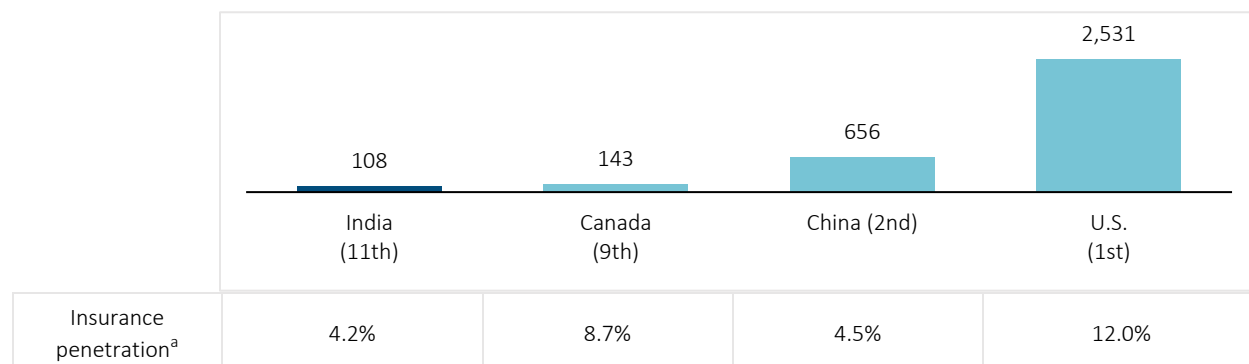
## Section 1: Introduction

With a population of 1.38 billion as of 2020, India is the second-largest country in the world.<sup>1</sup> It has a robust and growing insurance market estimated at around USD 110 billion at the end of FY 2021.<sup>2</sup> According to the Centre for Monitoring Indian Economy, households with income between INR 2,00,000 (about USD 2,610) and INR 5,00,000 (about USD 6,525) per year are categorized as the middle-income group.<sup>3</sup> India's middle-income class is expected to surpass China's middle-income class by FY 2027 in terms of population. That said, with an overall insurance penetration<sup>4</sup> of 4.2% (see Figure 1), the insurance industry has a significant scope for growth. Life insurance penetration stands at 3.2% and non-life insurance penetration at 1.0% in FY 2021.

Insurance penetration and per capita income have a strong nonlinear relationship.<sup>5</sup> In India, per capita income rose from USD 443 in FY 2000 to USD 1,193 in FY 2022. Over the same period, insurance penetration increased more than twofold, from 1.93% in FY 2000 to 4.20% in FY 2021, as indicated in Table 1. Thus, the size of the country's population and rising per capita income would provide ample opportunity for the insurance industry. Globally, India ranks 11th in terms of annual premium generation, as shown in Figure 1. In FY 2021, the Indian insurance sector generated a premium of USD 107 billion.

**Figure 1:**

**TOTAL INSURANCE PREMIUM VOLUME AND GLOBAL RANK BY SIZE, SELECTED COUNTRIES, FY 2021 (USD BILLION)**



<sup>a</sup> Insurance penetration expressed as the ratio of total premiums to GDP.

**Source:** CBIRC; "World Insurance: The Recovery Gains Pace," in *Sigma*, no. 3, Swiss Re Institute, March 2021, <https://www.swissre.com/>; Life and Non-life Insurance Penetration by Country 2020, Statista, April 11, 2022, <https://www.statista.com/>; Naveen Kumar, "COVID Brings Life Insurance Penetration in India to Global Levels," *Economic Times*, January 31, 2022, <https://economictimes.indiatimes.com/>

### 1.1 MARKET SIZE AND GROWTH

According to official statistics, the Indian insurance industry has 58 companies: 24 in the life insurance business, and 34 in non-life insurance. Life Insurance Corporation (LIC) and General Insurance Corporation of India (GIC Re) are the

<sup>1</sup> Population, Total—India, World Bank, <https://data.worldbank.org/indicator/SP.POP.TOTL> (accessed on June 30, 2022).

<sup>2</sup> Annual Report 2020–21, IRDAI, <https://www.irdai.gov.in/> (accessed on June 30, 2022).

<sup>3</sup> "Yogima Seth Sharma, "Middle-income households account for largest chunk of India's unemployed population: CMIE", *Economic Times*, March 31, 2022, <https://economictimes.indiatimes.com/jobs/middle-income-households-account-for-largest-chunk-of-indias-unemployed-population-cmie/articleshow/90563660.cms> (accessed on June 30, 2022).

<sup>4</sup> Insurance penetration is measured as the total life insurance premium paid in a year as a percentage of GDP.

<sup>5</sup> Rudolf Enz, "The S-Curve Relation Between Per-Capita Income and Insurance Penetration," *Geneva Papers on Risk and Insurance: Issues and Practice* 25, no. 3 (July 2000): 396–406.

sole public-sector companies operating in the life insurance and reinsurance businesses in India, respectively. These were the only insurance companies in India until the market was liberalized in 2000 (see the next section for further details). Additionally, there are four public-sector companies in the general insurance space; the rest are private insurers (see section 1.2.4).<sup>6</sup> Other stakeholders and intermediaries in the insurance market include agents (individuals and corporates), brokers (direct, composite and reinsurance),<sup>7</sup> web aggregators, surveyors, insurance marketing firms, and third-party administrators, among others.<sup>8</sup>

Insurance penetration and density,<sup>9</sup> two primary metrics used to assess a country's insurance sector development, have shown healthy growth since the liberalization of the industry in FY 2000. Specifically, while insurance penetration has risen from 1.93% (1.39% for life insurance and 0.54% in non-life insurance) in FY 2000 to 4.2% in FY 2021 (3.20% for life insurance and 1% in non-life insurance), insurance density has increased from USD 8.5 in FY 2000 to USD 78 in FY 2021 (the latest data available at the time of writing).<sup>10</sup> Premiums have a history of growth, and analysts forecast continuing growth in the coming years, owing to maturation of the industry, broader economic growth and favorable government policies.<sup>11</sup>

The life insurance segment is forecast to grow at an annual rate of 5.3% through FY 2023 and up to 10.1% through FY 2027.<sup>12</sup> The penetration of the life insurance sector has increased from 2.15% in FY 2002 to 3.20% in FY 2021, close to the global average of 3.3%; this is detailed later in this report.<sup>13</sup>

According to the annual report of IRDAI FY 2021, the premium earnings by the life insurance segments in India are as follows:<sup>14</sup>

- **Premium.** The life insurance industry recorded premium income of INR 6.29 lakh crore (roughly USD 84 billion) in FY 2021, growing 9.74% over the previous fiscal year.
- **Renewal premium.** Renewal premium accounted for 55.67% of the total premium received by life insurers in FY 2021, growing 11.60% over the previous fiscal year.
- **New-business premium.** The remaining 44.33% in FY 2021 was new-business premium, which grew 7.50% over the previous fiscal year.

<sup>6</sup> List of Insurance Companies, Department of Financial Services, <https://financialservices.gov.in/insurance-divisions/List-of-Insurance-Companies> (accessed on June 30, 2022).

<sup>7</sup> Frequently Asked Questions, IRDAI, [https://www.irdai.gov.in/ADMINCMS/cms/Uploadedfiles/RTI\\_FAQ/Brokers\\_FAQs.pdf](https://www.irdai.gov.in/ADMINCMS/cms/Uploadedfiles/RTI_FAQ/Brokers_FAQs.pdf) (accessed on June 30, 2022).

<sup>8</sup> Indian Insurance Industry Overview & Market Development Analysis, IBEF, April 2022, <https://www.ibef.org/industry/insurance-sector-india> (accessed on June 30, 2022).

<sup>9</sup> Insurance density is calculated as the ratio of insurance premium to population (per capita premium)

<sup>10</sup> Annual report, 2020–21, IRDAI, <https://www.irdai.gov.in/admincms/cms/uploadedfiles/annual%20reports/Annual%20Report%202020-21.pdf> (accessed on June 30, 2022)

<sup>11</sup> Raghav Dhanuka, "Insuring India," Invest India, <https://www.investindia.gov.in/sector/bfsi-insurance> (accessed on June 30, 2022).

<sup>12</sup> "Indian Insurance Industry Overview & Market Development Analysis," IBEF, April 2022, <https://www.ibef.org/industry/insurance-sector-india>; "India Health Insurance Market Showing Prolific Growth: Forecast to Grow at a CAGR of 10.1% by 2027," *GlobeNewswire*, January 25, 2022, <https://www.globenewswire.com/news-release/2022/01/25/2372819/0/en/India-Health-Insurance-Market-Showing-Prolific-Growth-Forecast-to-Grow-at-a-CAGR-of-10-1-by-2027-BlueWeave.html> (accessed on June 30, 2022).

<sup>13</sup> Annual Report 2020–21, IRDAI, <https://www.irdai.gov.in/> (accessed on June 30, 2022).

<sup>14</sup> Ibid



India's general (non-life) insurance sector comprises motor insurance (32.6%), health insurance (28.9%), fire insurance (11.2%) and other segments.<sup>15</sup> The general insurance industry underwrote total direct premium of INR 1.99 lakh crore (about USD 26 billion) in India for FY 2021, growing 5.19% over the previous fiscal year, driven by the robust performance of the health and motor segments. The gross direct premium income of India's general insurance industry was USD 14.62 billion in FY 2022 (until September 2021), an increase of 12.3% year over year,<sup>16</sup> due to 28.8% growth in the health segment and 84.7% growth in the personal accident segment.<sup>17</sup> However, non-life premiums were largely unchanged in USD terms for both FY 2020 and FY 2021, at approximately USD 26 billion, due to foreign-exchange movement.<sup>18</sup>

Insurance penetration and density across India, China, Canada and the U.S. are given in Table 1. While insurance penetration in India increased from 1.93% to 4.2% (118% growth) over the last two decades (from FY 2000 to FY 2021), insurance density increased from just USD 8.5 to USD 78. Among the countries selected for comparison in this series of reports, China has outperformed in both insurance penetration and density. While Canada and the United States are in a more mature stage than both China and India in terms of their insurance industry, China and India are expected to witness higher growth and dynamism in the future.

**Table 1:**  
**COMPARISON OF INSURANCE PENETRATION AND DENSITY ACROSS COUNTRIES**

Country	Insurance Penetration (%)		Insurance Density (Country Premium Issued/Population) (USD)	
	FY 2000	FY 2021	FY 2000	FY 2021
India	1.93%	4.20%	USD 8.5	USD 78.0
China	1.63%	4.50%	USD 13.3	USD 455.0
Canada	6.49%	8.70%	USD 700.6	USD 3,775.0
United States	8.50%	12.00%	USD 1,474.4	USD 7,673.0

**Source:** Annual Report 2020–21, IRDAI, <https://www.irdai.gov.in/>; "World Insurance: The Recovery Gains Pace," in *Sigma*, no. 3, Swiss Re Institute, March 2021, <https://www.swissre.com/>;

## 1.2 HISTORY OF INSURANCE IN INDIA

Informal insurance contracts such as agreements that govern the risks of shipping traded goods are almost as old as civilization. India's ancient legal texts such as Manusmriti, Dharmasastra and Arthashastra mention the pooling of resources such as grains, cattle and gold in times of adversity more than 2,000 years ago. India's first formal life insurance company was set up in 1818, when the Oriental Life Insurance Company was founded in Calcutta (now referred to as Kolkata). In 1850, Triton Insurance Company Ltd. became the first general insurer founded by the

<sup>15</sup> *Insurance*, IBEF, May 2021, <https://www.ibef.org/download/Insurance-May-2021.pdf> (accessed on June 30, 2022).

<sup>16</sup> "Year over year" (YOY) is a method of evaluating two or more measured events to compare the results at one period with those of a comparable period on an annualized basis.

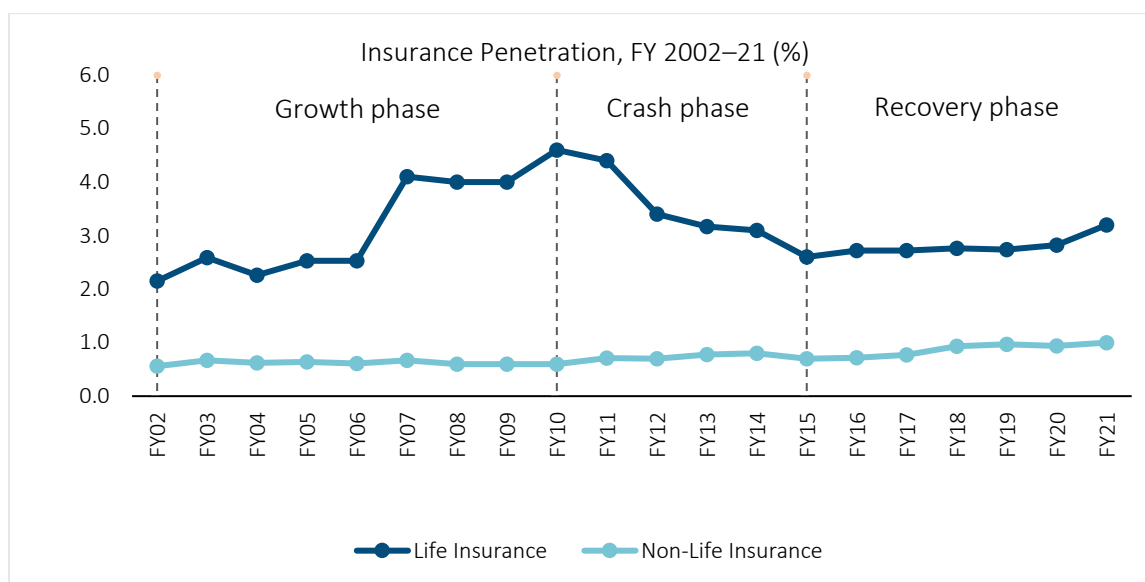
<sup>17</sup> *Insurance*, IBEF, May 2021, <https://www.ibef.org/download/Insurance-November-2021.pdf> (accessed on June 30, 2022).

<sup>18</sup> "Total Value of Gross Direct Premiums of Non-life Insurers in India from Financial Year 2016 to 2021," Statista, <https://www.statista.com/statistics/1196397/india-gross-direct-premium-of-non-life-insurers> (accessed on June 30, 2022).

British in the same city. Under British rule, insurance in India was primarily provided by the foreign offices of British insurance companies.<sup>19</sup>

When India gained independence from Britain in 1947, it had a highly competitive insurance sector. However, in response to allegations of widespread unfair trade practices and fraud in the industry, the socialist-leaning government of Prime Minister Jawaharlal Nehru passed the Life Insurance Corporation Act in 1956. The act nationalized 154 Indian insurers, 16 non-Indian insurers and 75 provident societies, creating the Life Insurance Corporation (LIC) of India, a state-run life insurance monopoly.<sup>20</sup> In 1972, this was followed by the General Insurance Business (Nationalization) Act, which created the General Insurance Corporation of India (GIC Re) by merging the 107 existing general insurers into subsidiaries of GIC Re. India began policy work on liberalizing its insurance sector in the 1990s. In 1999, the private sector was allowed to reenter the insurance market. India’s main insurance regulator, the Insurance Regulatory and Development Authority of India (IRDAI), was thus established in 1999.<sup>21</sup>

**Figure 2:**  
HISTORY OF INSURANCE PENETRATION IN INDIA



Source: Annual Report 2020–21, IRDAI, <https://www.irdai.gov.in/>

<sup>19</sup> “History of insurance in India,” IRDAI, July 31, 2020,

[https://www.irdai.gov.in/ADMINCMS/cms/NormalData\\_Layout.aspx?page=PageNo4&mid=2](https://www.irdai.gov.in/ADMINCMS/cms/NormalData_Layout.aspx?page=PageNo4&mid=2) (accessed on June 30, 2022).

<sup>20</sup> Gautam Chikermane, “70 Policies—Nationalisation of Life Insurance, 1956,” Observer Research Foundation, August 4, 2018, <https://www.orfonline.org/expert-speak/42999-70-policies-nationalisation-of-life-insurance-1956/> (accessed on June 30, 2022).

<sup>21</sup> “A Historical Preview of Insurance in India,” Symbo Insurance, <https://www.symboinsurance.com/blogs/insurance-in-general/historical-preview-insurance-india/> (accessed on June 30, 2022).

**Table 2:**  
**DEVELOPMENT OF INSURANCE MARKET**

Segment	Details
Development FY 1991–FY 2001 (not shown in Figure 2)	<ul style="list-style-type: none"> <li>• The process of opening the insurance sector was initiated in 1991, and the R. N. Malhotra Committee was formed. The committee, in its report submitted in FY 1994, recommended the entry of private insurance companies.</li> <li>• The Insurance Regulatory and Development Authority of India (IRDAI) was constituted through the IRDAI Act in FY 2000 to regulate insurance companies in India. Private insurance companies effectively started operations from FY 2001.</li> <li>• Coexistence of private and public companies increased competition. Subsequently, the Indian insurance sector saw several significant changes, such as a large number of new innovative products and improved distribution channels, which increased insurance penetration to above 2% in the early years after liberalization from 1.9% in FY 2000.</li> </ul>
Growth FY 2002–FY 2010	<ul style="list-style-type: none"> <li>• Privatization brought innovation in products and distribution channels to cater to various sections of the population. Unit-linked life insurance products (ULIPs) constituted the biggest innovation in the life insurance industry in the initial years of post-liberalization. Insurance penetration rose in this decade and peaked at 5.2% in FY 2010.</li> <li>• During FY 2006–FY 2008, India’s macroeconomic fundamentals were robust, including over 9% GDP growth rate, gross domestic saving of over 33%, moderate inflation of 4%, robust corporate results, a positive investment climate, a sound business outlook, and continued foreign institutional investments, supported by the active participation of Indian mutual funds, which drove the bullish trend in the Indian stock market.</li> <li>• IRDAI favored the sale of ULIPs. The proportion of ULIP funds of the total funds under management of life insurers surged from 0.10% in FY 2003 to 27.52% in FY 2010. In absolute terms, ULIP funds rose from INR 266 crore (approximately USD 34 million) in FY 2003 to INR 331,619 crore (approximately USD 43.28 million) in FY 2010. Therefore, during this period, ULIPs were a major contributor of premium to insurers, leading to high insurance penetration.</li> </ul>
Crash FY 2011–FY 2015	<ul style="list-style-type: none"> <li>• The global financial crisis was one of the key reasons for the decline in this period, because it increased unemployment and slowed economic growth. The Indian stock market crashed, the GDP growth rate fell to 6.7%, and inflation linked to the consumer price index (CPI) remained high at 8–9.7%.</li> <li>• Additionally, unhealthy practices of many agents drew the attention of IRDAI, which in FY 2010 released regulations on the sale and purchase of ULIP products. These measures shifted customer preferences away from ULIPs, and the share of ULIPs in the total first-year premium fell to 51%. According to the IRDAI, around 9.1 million policies lapsed in FY 2010, with some insurers reporting lapse rates as high as 50%.</li> <li>• This crash was fueled by the overflow of ULIP policies in the Indian market that had incredibly high rates of premium but offered policyholders little to no protection and were mainly used for tax exemptions. Thus, volatility in the stock market in FY 2009 and regulatory changes in FY 2010 adversely affected the sale of ULIP products and premiums, and thereby insurance penetration.</li> </ul>
Recovery FY 2016–present	<ul style="list-style-type: none"> <li>• Strict regulations on the purchase of ULIPs, amendments to the Insurance Act in FY 2015, and adoption of digital technologies led to a recovery of the insurance sector. After life insurance penetration reached a minimum of 2.6% in FY 2015, it grew only marginally over the years until it picked up significant growth in FY 2021, reaching 3.2%.</li> <li>• While India has now come close to the international average for life insurance penetration, it lags in non-life insurance penetration, according to the Economic Survey FY 2022. Globally, insurance penetration was 3.3% for the life segment and 4.1% for the non-life segment in FY 2020.</li> </ul>

**Source:** “Life Insurance Issues in the Millennial Decade,” Insurance Institute of India, July–December 2010, <https://www.insuranceinstituteofindia.com/>; K. Vidyavathi, “Rise and Fall of ULIPs in Indian Life Insurance Market,” *Journal of Corporate Governance, Insurance, and Risk Management* 4, series 1 (2017), <https://jcgirm.com/wp-content/>; “Life Policies Worth

Rs1 Trillion Lapse,” *Mint*, January 18, 2010, <https://www.livemint.com/>; “Guidance Notes on Recent Regulatory Changes Related to Unit Linked Insurance Products (ULIPs),” IRDAI, June 28, 2010, <https://www.irdai.gov.in/>; “Monetary Management and Financial Intermediation,” India Budget, <https://www.indiabudget.gov.in/>; “Life Insurance Penetration Close to Global Average: Economic Survey,” *Outlook India*, January 31, 2022, <https://www.outlookindia.com/>.

As part of the transition from the monopolist LIC, India adopted measures to allow the nascent private insurance sector to source expertise via foreign partnerships. To develop an independent insurance industry, the government gradually increased foreign ownership, was first limited to 26% in FY 2000.<sup>22</sup> The limits then rose to 49% in FY 2015 and 74% in FY 2022.<sup>23</sup> Figure 2 and Table 2 track insurance penetration in India in the post-liberalization period.

### 1.2.1 LIFE INSURANCE CORPORATION OF INDIA (LIC)

LIC was founded in 1956 as a state-run life insurance monopoly through the nationalization of 243 private insurance companies. It is one of 24 life insurance companies in India and the largest public-sector life insurance provider in the country. In FY 2021, it wrote premiums worth INR 4,033 billion (about USD 52.63 billion), with private-sector companies’ contribution at INR 2,254 billion (about USD 29.41 billion).

Recently, the Indian government has diluted its share in LIC through the scheduled IPO in May 2022, which included reserved shares for eligible employees, policyholders, retail investors and institutional investors. The government earlier planned to sell a 5% stake and raise around USD 13 billion from the market. However, the LIC IPO ended in a downbeat debut, raising only USD 2.7 billion for a 3.5% stake.<sup>24</sup>

A public listing of LIC will lead to disclosure of investment and loan portfolios, and the company will be subject to IRDAI regulations and practices like other entities, triggering a better focus on underwriting and products, transparency, governance and risk management.

Traditionally sold via in-person interaction, life insurance products have moved to digital channels and self-service. Additionally, the pandemic-induced uncertainties, volatile markets and falling interest rates played a key role in increasing demand for pure protection plans and for solutions offering guaranteed returns and assured savings.<sup>25</sup> Moreover, the industry witnessed a radical shift in customers’ needs, behaviors and expectations, which disrupted insurance operations, prompting an overnight shift to virtualization. The overall sector trend has been toward streamlining and simplifying the technological interventions to become more agile and offer innovative digital propositions to enhance the customer experience.

<sup>22</sup> Neelanjit Das, “Key Events That Made LIC the Largest and Most Valued Life Insurance Company in India,” *Outlook India*, February 19, 2022, <https://www.outlookindia.com/business/key-events-that-made-lic-the-largest-and-most-valued-life-insurance-company-in-india-news-183068> (accessed on June 30, 2022).

<sup>23</sup> “FDI Limit in Insurance Sector Increased from 26% to 49%,” *Bihar Prabha News*, July 10, 2014, <https://news.biharprabha.com/2014/07/fdi-limit-in-insurance-sector-increased-from-26-to-49/>; Ashwin Manikandan & Digbijay Mishra, “PayTm Considering JV Option for Insurance Business Clearance,” *Economic Times*, July 29, 2021, <https://economictimes.indiatimes.com/tech/startups/paytm-considering-jv-option-for-insurance-business-clearance/articleshow/84839020.cms> (accessed on June 30, 2022).

<sup>24</sup> Aftab Ahmed and Nupur Anand, “How LIC’s IPO, India’s Biggest, Ended in a Downbeat Debut,” *Economic Times*, May 17, 2022, <https://economictimes.indiatimes.com/markets/stocks/news/how-lics-ipo-indias-biggest-ended-in-a-downbeat-debut/articleshow/91624693.cms> (accessed on June 30, 2022).

<sup>25</sup> Kamlesh Rao, “Life Insurance Industry Trends and Outlook 2022,” *BW Businessworld*, January 9, 2022, <https://www.businessworld.in/article/Life-Insurance-Industry-Trends-And-Outlook-2022-/09-01-2022-417112/> (accessed on June 30, 2022).

### 1.2.2 GENERAL INSURANCE CORPORATION OF INDIA (GIC) AND FORMER SUBSIDIARIES

GIC was founded in 1972 as a state-run general insurance monopoly via nationalization of 107 private insurers, which were merged into four subsidiaries of GIC:

- National Insurance Co. Ltd.
- New India Assurance Co. Ltd.
- Oriental Insurance Co. Ltd.
- United India Insurance Co. Ltd.

When the Insurance Regulatory and Development Authority Act of 1999 was introduced, however, GIC and its subsidiaries' exclusivity of undertaking the general insurance business in India was removed.<sup>26</sup> Thereafter, in November 2000, GIC was formally designated a reinsurer, and its supervisory role over the four subsidiaries ended. After the General Insurance Business (Nationalization) Amendment Act of 2002 came into effect on March 21, 2003, GIC's role as a holding company of its subsidiaries came to an end, with ownership of GIC and the four subsidiaries was transferred to the government.

In January 2022, IRDAI expressed concerns about the solvency of three of the state-run GIC subsidiaries—New India Assurance, Oriental Insurance and United India Insurance. IRDAI estimated that the firms would need an infusion of INR 5,000 lakh to 6,000 lakh (approximately USD 6.52 million to 7.83 million).<sup>27</sup> Together with planned operational improvements, recapitalization is expected to improve the companies' financials ahead of future privatization.<sup>28</sup>

The performance of three GIC subsidiaries—United India Insurance Co. Ltd., National Insurance Company and Oriental Insurance Company—has moderated after 2017, due to reasons such as higher loss provisioning requirements by the regulator in 2013 in the motor third-party segment, owing to rising claims, and a decline in underwriting performance leading to high claim ratios in group health, marine and fire business segments.<sup>29</sup> Additionally, poor risk assessment, less efficient operating models, fewer innovation in products, and lower usage of IT compared with the private sector have plagued public general insurers.<sup>30</sup>

Together with ongoing market liberalization, the public general insurers' market share fell from 100% in FY 2000 (prior to liberalization) to 34.29% in Q4 FY 2022 (see Figure 3).<sup>31</sup> Also, the solvency ratios of United India Insurance

<sup>26</sup> "Public Sector Insurance Companies," Department of Financial Services, <https://financialservices.gov.in/insurance-divisions/Public-Sector-Insurance-Companies> (accessed on June 30, 2022).

<sup>27</sup> Dheeraj Tiwari, "Govt Bats for Loss-Making Insurers Seeks Regulatory Forbearance," *The Economic Times*, Jan 11, 2022. <https://economictimes.indiatimes.com/news/economy/policy/govt-bats-for-loss-making-insurers-seeks-regulatory-forgiveness/articleshow/88829539.cms> (accessed on June 30, 2022)

<sup>28</sup> Ibid

<sup>29</sup> United India Insurance Company Limited, CRISIL Ratings, May 29, 2021, [https://www.crisil.com/mnt/winshare/Ratings/RatingList/RatingDocs/UnitedIndiaInsuranceCompanyLimited\\_May%2029,%202021\\_RR\\_271327.html](https://www.crisil.com/mnt/winshare/Ratings/RatingList/RatingDocs/UnitedIndiaInsuranceCompanyLimited_May%2029,%202021_RR_271327.html); National Insurance Co. Limited, CRISIL Ratings, May 31, 2021, [https://www.crisil.com/mnt/winshare/Ratings/RatingList/RatingDocs/NationalInsuranceCoLimited\\_May%2031,%202021\\_RR\\_271326.html](https://www.crisil.com/mnt/winshare/Ratings/RatingList/RatingDocs/NationalInsuranceCoLimited_May%2031,%202021_RR_271326.html); The Oriental Insurance Company Limited, CRISIL Ratings, May 27, 2021, [https://www.crisil.com/mnt/winshare/Ratings/RatingList/RatingDocs/TheOrientalInsuranceCompanyLimited\\_May%2027,%202021\\_RR\\_271277.html](https://www.crisil.com/mnt/winshare/Ratings/RatingList/RatingDocs/TheOrientalInsuranceCompanyLimited_May%2027,%202021_RR_271277.html) (accessed on June 30, 2022).

<sup>30</sup> Anand Adhikari, "Four PSU Insurance Companies Are Losing the Race Against Private Players," *Business Today*, July 5, 2015, <https://www.businesstoday.in/magazine/features/story/4-psu-general-insurance-companies-struggle-vs-competition-48327-2015-06-22> (accessed on June 30, 2022).

<sup>31</sup> Joel Rebello, "PSU General Insurers Lose Market Share; New India Bucks Trend," *Economic Times*, March 11, 2022, <https://economictimes.indiatimes.com/markets/stocks/news/psu-general-insurers-lose-market-share-new-india-bucks-trend/articleshow/90138624.cms> (accessed on June 30).

Co. Ltd., National Insurance Company and Oriental Insurance Company were 0.30, 0.02 and 0.92, respectively, in Q4 FY 2020. To address these issues and improve the financial performance of the companies, and on the recommendation of IRDAI, the government is likely to infuse capital of INR 5,000 crore (about USD 652 million) in the coming years, as approved by the Union Cabinet.<sup>32</sup>

In the case of New India Assurance Co. Ltd., the company is supported by healthy capitalization and solvency ratio. On December 31, 2020, its net worth was INR 15,554 crore (approximately USD 2.03 billion, adjusted for foreign-currency translation reserves, miscellaneous expenditures and deferred tax assets), and solvency ratio was a comfortable 2.15.

### 1.2.3 SPECIALIZED PUBLIC INSURERS

In India, apart from traditional life insurance and general insurance companies, there are two state-run insurance companies that offer specialized services of export credit insurance and agricultural insurance: the Agricultural Insurance Co. of India Ltd. (AIC) and the Export Credit Guarantee Corporation of India Ltd. (ECGC).<sup>33</sup> Table 3 provides details about these specialized insurance companies.<sup>34</sup>

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<sup>32</sup> “Govt May Infuse up to Rs 5,000 Cr Additional Capital in PSU General Insurers,” *Business Today*, May 8, 2022, <https://www.businesstoday.in/latest/economy/story/govt-may-infuse-up-to-rs-5000-cr-additional-capital-in-psu-general-insurers-332731-2022-05-08> (accessed on June 30).

<sup>33</sup> Annual report 2020–21, IRDAI, <https://www.irdai.gov.in/> (accessed on June 30).

<sup>34</sup> Specialized insurance companies in India are owned by the government of India and fall in the general insurance segment. Two insurance companies were formed to particularly address the problems that were not earlier addressed by any public or private insurance company. Thus, the government has categorized them as specialized insurers.

**Table 3:**  
SPECIALIZED PUBLIC INSURERS

Specialized Insurance Company	Key Details
Agriculture Insurance Co. of India Ltd. (AIC)	<ul style="list-style-type: none"> <li>In December 2002, AIC was incorporated to provide subsidized yield- and weather-based crop insurance across India—services previously provided by GIC.</li> <li>It is controlled by India’s Ministry of Finance, with ownership split between GIC Re, its former subsidiary, and India’s state-run National Bank for Agriculture and Rural Development.</li> <li>AIC has underwritten gross direct premium of INR 12,053 crore (around USD 1,573.08 million) in FY 2021, reporting year-over-year growth of 28.76%. At the end of FY 2021, its solvency ratio was 2.09.</li> </ul>
Export Credit Guarantee Corporation of India Ltd. (ECGC)	<ul style="list-style-type: none"> <li>The government of India had set up the Export Risks Insurance Corporation in July 1957, with the objective of promoting the country’s exports by providing credit risk insurance and related services for exports.</li> <li>It was changed to Export Credit and Guarantee Corporation Limited in 1964, and thereafter to Export Credit Guarantee Corporation of India in 1983.</li> <li>ECGC underwrote gross direct premiums of INR 1,062 crore (about USD 139 million) in FY 2021, a year-over-year decrease of 1.21%. At the end of FY 2021, its solvency ratio was 19.25.</li> </ul>

**Source:** “AIC Gets Contract to Cover Crops,” *Tribune*, October 24, 2018, <https://www.tribuneindia.com/>; “About Us,” Agriculture Insurance Company of India Limited, <https://www.aicofindia.com/AICEng/Pages/AICAboutUs.aspx>; “Export Credit Guarantee Corporation of India Limited,” India Ministry of Commerce and Industry, Department of Commerce, <https://commerce.gov.in/>; Annual Report 2020–21, IRDAI, <https://www.irdai.gov.in/>.

## Section 2: Research on Insurance and Enterprise Risk Management (ERM) in India

In India, major sources of research about insurance and ERM are the many professional organizations for actuaries, insurers, and other public and private organizations. In addition to describing these, we identify several events and publications that are sources of relevant research.

### 2.1 ACTUARIAL ORGANIZATIONS IN INDIA

Shortly after incorporation in 2000, IRDAI issued Appointed Actuary Regulations of 2000, which were further updated in 2017. As per the regulations, every insurance firm is required to designate an appointed actuary, who acts as the key actuarial expert on the firm's actuarial models and practices, solvency and compliance with insurance law.<sup>35</sup> An individual is eligible to be designated appointed actuary by an insurer if he or she is an Indian resident under 65 years old and meets a series of requirements pertaining to education, post-qualification professional experience, appropriate specialization and sound ethical and professional conduct.<sup>36</sup>

#### 2.1.1 INSTITUTE OF ACTUARIES OF INDIA (IAI)

The Institute of Actuaries of India (IAI) was established under the Actuaries Act of 2006 to regulate the actuarial profession in India.<sup>37</sup> It is the successor entity to the Actuarial Society of India, which was created in 1944 as an umbrella organization for the actuarial profession. The IAI is a full member association of the International Actuarial Association, the global body of the actuarial profession, and one of the 11 members of the East Asian Actuarial Congress. The institute has the following stated objectives:<sup>38</sup>

- To promote, uphold and develop the standards of professional education, training, knowledge, practice and conduct among actuaries
- To promote the status of the actuarial profession
- To regulate the practice by members of the actuarial profession
- To promote, in the public interest, knowledge and research in all matters relevant to actuarial science and its application

The IAI has held an annual international actuarial conference for over two decades. The most recent conference, the Virtual Actuarial Conclave (VAC 2022), was held on February 10–12, 2022, virtually for the second time.<sup>39</sup> The three-day event focused on discussion of critical issues disrupting insurance business models, as well as the evolving role of actuaries in managing emerging risks. It also brought together eminent dignitaries from insurance, finance and wider domains from around the globe, with as many as 73 speakers presenting. Eminent names included Jennifer L. Gillespie, president of the Society of Actuaries (SOA); Andrew Peterson, senior director of the International Society of Actuaries; Roseanne Harris, president of the International Actuarial Association; Roosevelt Mosley, president of

<sup>35</sup> Consolidated AA Regulations 2017, amended up to May 14, 2020, IRDAI, <https://www.irdai.gov.in/ADMINCMS/cms/Uploadedfiles/Regulations/Consolidated/Consolidated%20AA%20Regulations%202017.pdf> (accessed on June 30, 2022).

<sup>36</sup> Ibid

<sup>37</sup> The Actuaries Act, 2006, published in *Gazette of India*, Aug 27, 2006, accessed at IAI website, <http://www.actuariesindia.org/guidance/scanned%20GN.pdf> (accessed on June 30, 2022).

<sup>38</sup> "Important Announcements in the Past 30 Days," Institute of Actuaries of India, <http://www.actuariesindia.org/Index.aspx?AspxAutoDetectCookieSupport=1> (accessed on June 30, 2022).

<sup>39</sup> "Virtual Actuarial Conclave 2022 Brings Together the Entire Actuarial Community on ibentos Virtual Event Platform," *Everything Experiential*, March 2, 2022, <http://everythingexperiential.businessworld.in/article/Virtual-Actuarial-Conclave-2022-Brings-Together-The-Entire-Actuarial-Community-on-ibentos-Virtual-Event-Platform/02-03-2022-421829/> (accessed on June 30, 2022).



the Casualty Actuarial Society; Matt Saker, president of the Institute and Faculty of Actuaries (IFoA); and Tjaart Esterhuysen, president of the Actuarial Society of South Africa.<sup>40</sup>

The IAI also publishes a monthly magazine, *Actuary India*, which highlights relevant industry topics. Recent issues of *Actuary India* have covered data science and analytics, implications of onboard devices and wearables in motor and health insurance, and IFRS 17 implementation. The issue on IFRS 17 discussed transitional challenges, solution design and implications for insurers.

### 2.1.2 INSTITUTE AND FACULTY OF ACTUARIES (IFOA)

The UK-based Institute and Faculty of Actuaries (IFoA) also has a strong presence in India, with members working in businesses, the government and global multinationals. The IFoA and the IAI signed a mutual recognition agreement (MRA) in December 2021, recognizing each other's professional qualifications. The 2021 MRA supersedes the prior MRA from February 2004.<sup>41</sup> It ensures educational equivalence between qualifications covered by the MRA and enables members to have their professional qualifications recognized in the other country.<sup>42</sup>

### 2.1.3 CASUALTY ACTUARIAL SOCIETY (CAS)

The Casualty Actuarial Society (CAS) is a leading international organization for credentialing and professional education. Founded in 1914, it is the world's only actuarial organization focused exclusively on property and casualty risks and has over 9,100 members worldwide. CAS members are experts in property and casualty insurance, reinsurance, finance, risk management and ERM. CAS and the IAI signed an MRA in November 2015 to mutually recognize and grant fellowship in each other's organization, subject to the negotiated terms.<sup>43</sup> CAS was one of the silver sponsors of the VAC 2022 conclave, with its president, Roosevelt Mosley, attending the event.

### 2.1.4 SOCIETY OF ACTUARIES (SOA)

Founded in the U.S. in 1949, the Society of Actuaries (SOA) is the largest global professional actuarial association by membership. As a part of its mission to advance the actuarial profession, it organizes events and studies, hosts qualifying exams, and seeks to collaborate with local actuarial associations worldwide.

As part of its outreach and research, SOA regularly publishes research on global topics of interest to the insurance and actuarial industries, including in India. It also seeks to establish connections and collaborate with other actuarial associations around the world. The SOA was a silver sponsor of the IAI's VAC 2022 event, with its president, Jennifer L. Gillespie, and senior director, Andrew Peterson, attending as speakers.

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<sup>40</sup>"Virtual Actuarial Conclave (VAC-2022) organized by Institute of Actuaries of India Concludes Successfully", Cision PR Newswire, February 17, 2022, <https://www.prnewswire.com/in/news-releases/virtual-actuarial-conclave-vac-2022-organized-by-institute-of-actuaries-of-india-concludes-successfully-801559205.html> (accessed on June 30, 2022).

<sup>41</sup>"Types of Memberships," Institute of Actuaries of India, [http://www.actuariesindia.org/subMenu.aspx?id=25&val=Types\\_of\\_Membership](http://www.actuariesindia.org/subMenu.aspx?id=25&val=Types_of_Membership) (accessed on June 30, 2022).

<sup>42</sup>"IFoA in India," Institute and Faculty of Actuaries, <https://www.actuaries.org.uk/get-involved/regional-activity/international-regional-activity/ifoia-india> (accessed on June 30, 2022).

<sup>43</sup>Mike Boa, "Mutual Recognition: The CAS and the IAI Enter Agreement," Casualty Actuarial Society, March 2016, <https://ar.casact.org/mutual-recognition-the-cas-and-the-iai-enter-agreement/> (accessed on June 30, 2022).

## 2.2 OTHER INSURANCE INSTITUTIONS IN INDIA

Other national and presence of international organizations in India promote training, research and high standards for the actuarial profession and the practice of risk management.

### 2.2.1 INSTITUTE OF INSURANCE AND RISK MANAGEMENT (IIRM)

The Institute of Insurance and Risk Management (IIRM) was established in 2004 in Hyderabad as part of a joint initiative by IRDAI and the state government of Telangana. IIRM was conceived as a center of excellence for advanced research and training in areas of financial services, including insurance, actuarial sciences and analytics, risk management and pension fund management, along with meeting multiple demands of the Indian economy.<sup>44</sup> It has been approved by the All-India Council for Technical Education (AICTE), a statutory body and a national-level council for technical education in India.

IIRM is working to establish an institute of global standards, catering to all aspects of financial services.<sup>45</sup> In February 2022, IIRM and GloQal Technologies, an IT firm, entered into an agreement for policy-oriented reengineering and risk management initiatives in agriculture, health care and other sectors.<sup>46</sup>

### 2.2.2 INSURANCE INSTITUTE OF INDIA (III)

The Insurance Institute of India (III) is governed by a council comprising corporate members representing Indian public-sector insurers and associated institutes across the country. It reports to the Indian Ministry of Finance. The Board of Education guides the institute in its academic and administrative decision making. The institute's qualifications are highly regarded not only in India but also in the other countries of the South Asian Association for Regional Cooperation, Africa, the Middle East, and the Association of Southeast Asian Nations region. III is a member of the Institute for Global Insurance Education and has a long-standing association with many other reputed global institutions and associations.

The III works closely with the Chambers of Trade and Commerce to publish its research results and other learnings for the benefit of the insurance industry. It has also collaborated with the National Institute of Disaster Management (NIDM) to increase nationwide awareness of disaster risks and insurance protection through a series of webinars and other literacy-building activities. In addition, the III and NIDM are jointly organizing a series of monthly webinars to inform industry professionals about disaster risks and how these can be transferred via insurance mechanisms cost-effectively.

### 2.2.3 NATIONAL INSURANCE ACADEMY (NIA)

The National Insurance Academy (NIA) publishes a biannual journal of insurance and risk management that covers life insurance, general insurance, reinsurance, health insurance, crop insurance, credit insurance, pensions, actuarial services, insurance investment, market research for insurance companies, developing insurance institutions and leadership for succession planning, and insurance regulatory compliance. The academy has developed a 7A

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<sup>44</sup> Annual report 2020–21, IRDAI, <https://www.irdai.gov.in/admincms/cms/uploadedfiles/annual%20reports/Annual%20Report%202020-21.pdf> (accessed on June 30, 2022).

<sup>45</sup> The All-India Council for Technical Education is a statutory body and a national-level council for technical education in India.

<sup>46</sup> "IIRM Joins Hands with GloQal for Being a Part of Elite Consortium," IIRM, February 15, 2022, <https://www.iirmworld.org.in/iirm-joins-hands-with-gloqal-for-being-a-part-of-elite-consortium/> (accessed on June 30, 2022).

framework for the organizational structure of insurance, a 7P framework for the underwriting structure of insurance, and a 7E framework for the value structure of insurance.<sup>47</sup>

#### 2.2.4 INSTITUTE OF RISK MANAGEMENT (IRM)

The Institute of Risk Management (IRM) is a professional body offering education and certifications in ERM. The organization was founded in 1986 and is headquartered in the U.K.<sup>48</sup> Its Indian affiliate, IRM India, offers ERM training and certifications; its five-level ERM exam curriculum serves as the flagship program, with additional certificate courses provided in areas such as supply chain risk management, digital risk and ERM for start-ups.<sup>49</sup>

A report published in late 2021 by IRM's India Regional Group, in collaboration with AICTE, found that education institutions in India still do not have a proper framework to deliver ERM education to students, and there was general consensus on the needs for regulation that emphasizes better risk education and for improving risk literacy among graduate and postgraduate students.<sup>50</sup> The publication, *Enterprise Risk Management and the Indian Higher Education System*, drew responses from over 1,000 Indian institutions. This initiative engages with higher-education bodies to help them improve risk management education and focuses on embedding ERM education across the country.<sup>51</sup> According to the report, 60% of the respondent institutions were affiliated with universities that exercise control over their course framework. There was consensus on the need for regulations that emphasize better risk education for improving risk literacy among students.<sup>52</sup> In fact, 82% of the study participants said academic regulators mandating a formal ERM framework would help the teaching-learning process.

### 2.3 RESEARCH, CONFERENCES AND PUBLICATIONS

Besides the endeavors described so far in this section, other organizations, including businesses, have done much to advance knowledge in the industry.

In 2018, State Bank of India (SBI) Life Insurance was conferred with an ERM award of distinction by the Risk and Insurance Management Society (RIMS) for its ERM initiatives to improve processes that identify patterns and indicators to recognize fraudulent claims.<sup>53</sup> To be sure, the SBI Life Insurance risk management team's efforts support cross-departmental collaboration that allows for more accurate assessment of customer insurability. These initiatives contributed savings of more than USD 15 million.

At a virtual ERM conference organized by RIMS in 2020, Infosys, an Indian multinational information technology firm, received an award for empowerment to transform digitally and leveraging technology to enhance products and services.<sup>54</sup> The company's ERM program is positioned as a business enabler that also successfully elevates

<sup>47</sup> National Insurance Academy, Wikipedia, [https://en.wikipedia.org/wiki/National\\_Insurance\\_Academy](https://en.wikipedia.org/wiki/National_Insurance_Academy) (accessed on June 30, 2022).

<sup>48</sup> "Our Story," Institute of Risk Management, <https://www.theirm.org/what-we-do/about-us/our-story/> (accessed on June 30, 2022).

<sup>49</sup> "About Us," Institute of Risk Management, <https://www.theirmindia.org/about-us> (accessed on June 30, 2022).

<sup>50</sup> Vikram Chaudhary, "Students Don't Know Much About ERM," *Financial Express*, November 22, 2021, <https://www.financialexpress.com/education-2/students-dont-know-much-about-erm/2373400/> (accessed on June 30, 2022).

<sup>51</sup> "Thought Leadership," Institute of Risk Management, <https://www.theirmindia.org/> (accessed on June 30, 2022).

<sup>52</sup> "Enterprise Risk Management (ERM) and the Indian Higher Education System," Institute of Risk Management, 2021, <https://www.theirmindia.org/> (accessed on June 30, 2022).

<sup>53</sup> "First RIMS India ERM Award of Distinction Presented to SBI Life Insurance Company," Risk Management Society, November 14, 2018, <https://www.rims.org/about-us/newsroom/news/first-rims-india-erm-award-of-distinction-presented-to-sbi-life-insurance-company> (accessed on June 30, 2022).

<sup>54</sup> "RIMS Global ERM Award of Distinction Goes to Infosys Limited," *Press Release Point*, November 5, 2020, <https://www.pressreleasepoint.com/rims-global-erm-award-distinction-goes-infosys-limited> (accessed on June 30, 2022).

critical risks to the board level. Additionally, the company's reaction to the COVID-19 crisis exemplified its ERM framework that ensured resilience during the pandemic disruption, seamless transition of 99% employees to remote working, and uninterrupted service to customers. In fact, during this period, Infosys was able to provide revenue growth guidance to the market when most other companies had withdrawn it.

In December 2021, RIMS also published a report on excellence in risk management in India. The report indicated that many surveyed C-suite executives and risk professionals in India planned to increase investment in their organization's risk management process. This could prove to be a critical differentiator in navigating COVID-19 recovery and other emerging risks in 2022. Additionally, it underscores the imperative to develop robust risk management strategies for current as well as emerging risks and to focus on building resilience.<sup>55</sup>

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<sup>55</sup> "RIMS Risk Forum India 2021: Building Resilience as COVID, Cyber Risk Top Business Risks," *Risk Management Monitor*, December 3, 2021, <https://www.riskmanagementmonitor.com/rims-risk-forum-india-2021-building-resilience-as-covid-cyber-risk-top-business-risks/> (accessed on June 30, 2022).

### Section 3: State of Innovation

Insurance is a federally regulated industry in India. There are two laws that govern the sector: the Insurance Act of 1938 and the IRDAI Act of 1999. The insurance sector in India has come full circle from being an open, competitive market to nationalization and back to becoming a liberalized market.

As the insurance sector was opened to private players in 2000, competition among insurers increased. The liberalization of the sector has also led to the launch of new products, increased product variants, and improved customer service. Also, product innovation and channel diversification have gained momentum in line with the global trend of convergence of financial services. The innovation journey of the insurance industry is tied to multiple factors—business environment, regulations, market size, growth and customer needs. Of late, it is also tied to customers' growing familiarity with technology. As customers have become accustomed to searching for information online with mobile computing and digitization, purchasing patterns have shifted from in-person sales to online.<sup>56</sup>

The Indian government has slowly increased the FDI limit in the insurance sector from 26% in 2000 to 74% in 2021. The government took note of the importance of the insurance sector and the need for increasing insurance penetration, which currently stands at a significantly low 4.2%, versus the global average of 7.4%.<sup>57</sup> The rise in the FDI limit will help insurers access fresh capital to improve penetration into the market, open a window for accessing growth capital for small and unlisted insurers and additionally allow a number of midsize and smaller players to recapitalize themselves and compete effectively with the larger players, thus leveling the playing field, with better outcomes for customers, and bringing in better technical know-how, to the advantage of consumers.<sup>58</sup> The key market innovations with the change in FDI limits since market liberalization are tabulated in Table 4.

Against the backdrop of a rapidly changing business environment and changing customer demographics and product preferences, the private insurers have kept taking market share away from the public insurers over the years. For instance, LIC lost significant market share to private companies in the post-liberalization period, with private companies such as ICICI Prudential Life and Birla Sun Life, which were among the first batch of entrants, witnessing considerable success in securing new business. The market share of India's largest insurer, LIC, declined from 100% in the pre-2000 era to 71.80% in 2016 and decreased further to 64.14% in March 2021.<sup>59</sup> In contrast, private non-life insurers have significantly gained market share of the four public insurers. A detailed view of the market share trade-off between public and private insurers is provided in Figure 3.

The IRDAI has played an active role in supporting innovation in the insurance sector, with the introduction of Regulatory Sandbox Regulations in 2019. It provides a testing environment for new business models, processes and applications, and proposals to experiment and test innovative solutions that are not explicitly in accordance with the

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<sup>56</sup> Sanjeev Sinha, "Insurance Purchases in India Shifting Rapidly to Online Modes: Swiss Re," *Financial Express*, January 13, 2021, <https://www.financialexpress.com/money/insurance/insurance-purchases-in-india-shifting-rapidly-to-online-modes-swiss-re/2170007/> (accessed on June 30, 2022).

<sup>57</sup> Insurance Penetration and Density, IRDAI Annual Report 2020–21, IRDA, <https://www.irdai.gov.in/admincms/cms/uploadedfiles/annual%20reports/Annual%20Report%202020-21.pdf> (accessed on June 30, 2022).

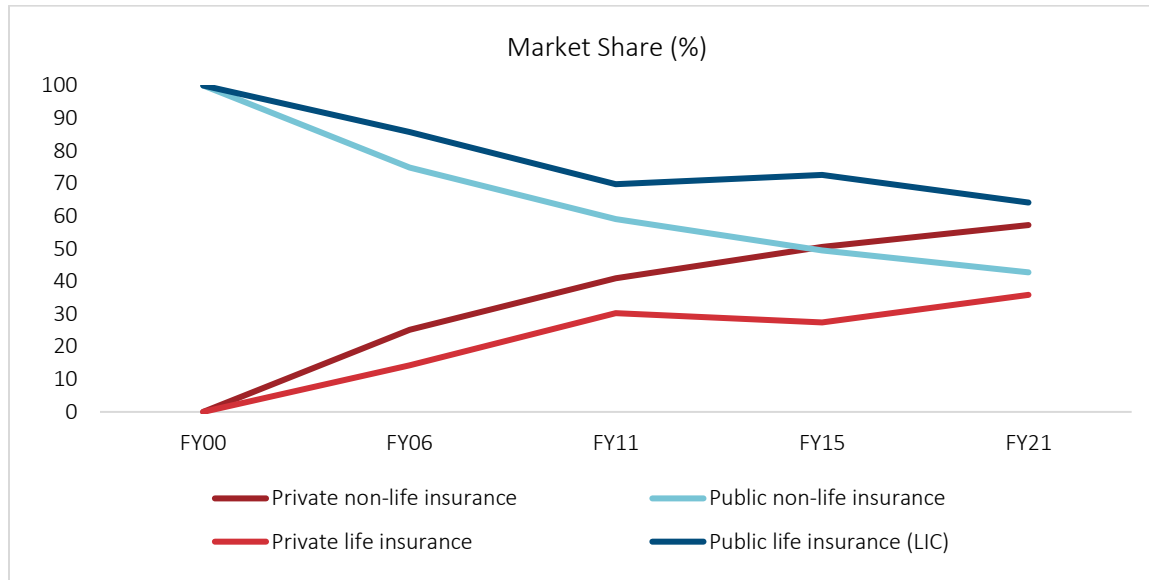
<sup>58</sup> Ashwin Manikandan, "Government's Move to Relax FDI Limit for Insurance a Big Boost for Small Insurers," *Economic Times*, February 1, 2021, <https://economictimes.indiatimes.com/industry/banking/finance/insure/governments-move-to-relax-fdi-limit-for-insurance-a-big-boost-for-small-insurers/articleshow/80630354.cms?from=mdr> (accessed on June 30, 2022).

<sup>59</sup> "LIC Market Share Unparalleled Globally with Highest ROE of 82%," *Times of India*, February 7, 2022, <https://timesofindia.indiatimes.com/business/india-business/lic-market-share-unparalleled-globally-with-highest-roe-of-82/articleshow/89396725.cms> (accessed on June 30, 2022).

existing regulatory framework.<sup>60</sup> Many insurance companies have been developing and testing several products under this framework to widen their reach, such as usage-based insurance policies and use of wearables data for health-based insurance pricing, discussed at greater length later in this section.

Insurers are transforming to adapt to the digital world by enabling themselves to tie up with technological companies such as payment apps and e-commerce websites to penetrate more into the Indian market. They are deploying advanced tools such as AI/ML to bring efficiency into their business from operational to claim management, as discussed further in section 3.2.

**Figure 3:**  
**HISTORY OF MARKET SHARE BETWEEN PUBLIC AND PRIVATE INSURANCE INDUSTRY**



Source: Annual Reports, IRDAI

<sup>60</sup> “InsurTech—the Catalyst for Growth of the Indian Insurance Sector,” *Lexology*, April 8, 2022, <https://www.lexology.com/library/detail.aspx?g=087137f6-2ddf-431b-8dd4-d2773c7cf3b9> (accessed on June 30, 2022).

**Table 4:**  
KEY MARKET INNOVATIONS AND LIMITS ON FOREIGN DIRECT INVESTMENT (FDI)

Item	FDI up to 26% FY 2000–FY 2015	FDI up to 49% FY 2016–FY 2021	FDI up to 74% FY 2021–Present
<b>FDI metric</b>	In FY 2000, the government for the first time allowed FDI in insurance up to 26% of the company's equity share capital.	The limit in FY 2016 permitted investment by foreign investors of up to 49%.	The FDI limit was increased to 74% from 49% at the start of FY 2022
<b>Government</b>	The Insurance Laws (Amendment) Act, FY 2015 Entry of private players and foreign companies into the Indian insurance market (FY 2000)	IFSC at the Gujarat International Finance Tech-City (GIFT), a financial district in Gujarat	Diluting 5% share of only public life insurance company, LIC
<b>Regulatory</b>	Formation of IRDAI and framing of various regulations (FY 2000)	Regulatory sandbox Micro insurance regulations	Likely to adopt Ind AS 117 (equivalent to IFRS 17)
<b>Innovation</b>	Introduction of new intermediaries: Bancassurance, corporate agents, and web aggregators Rise and fall of unit-linked insurance products Arrival of health insurers	Digital disruption in insurance and online platform for insurance policies	Adoption of insurtech: Making use of AI, ML, and Internet of Things for better customer experience and bringing operational efficiency

**Source:** "India: Insurance Laws (Amendment) Act, 2015," *Mondaq*, February 25, 2016, <https://www.mondaq.com/>; "Insurers Likely to Look at Enhanced FDI Cap," *Hindu Business Line*, April 24, 2022, <https://www.thehindubusinessline.com/>; "History of Insurance in India," IRDAI, July 31, 2020, <https://www.irdai.gov.in/ADMINCMS/>; "At Gift City, Glass Looks Half Full," *Mint*, May 13, 2022, <https://www.livemint.com/market/>; "Government to Dilute 3.5% Stake in LIC at the IPO, Instead of 5%," *Money Control*, April 24, 2022, <https://www.livemint.com/>.

### 3.1 DISTRIBUTION CHANNELS

Since the nationalization of the life and non-life insurance industry in India, channels of insurance distribution were significantly dependent on face-to-face interactions with customers. In 2018, in terms of premium, more than 99% of life insurance policies were sold through face-to-face distribution. Premiums for the remaining were paid through web aggregators or online channels.<sup>61</sup> For the non-life insurance sector, most of the contribution came from face-to-face channels such as agents and brokers. Distribution channels regulated by the IRDAI are discussed in detail in section 4.1.2.1

Insurers are transforming themselves to adapt to the digital world by enabling distribution partners and changing the way the traditional face-to-face sales model works. The evolving insurance sales process now encompasses a customer-centric approach instead of a product-led approach. Such an approach requires an extensive understanding of customers' financial needs and their current financial situation, ease of use and the ability to

<sup>61</sup> *Assisted Distribution: Changing the Face of Insurance Sales*, PWC, August 2019, <https://www.pwc.in/assets/pdfs/research-insights/2019/assisted-distribution.pdf> (accessed on June 30, 2022).

analyze data to identify a solution that caters to customer requirements. A Swiss Re survey of Asian markets in May 2020 highlighted this sentiment, as two-thirds of respondents indicated concern about their health and well-being and stated that their purchase patterns for insurance would shift to online mode.<sup>62</sup>

Web aggregators have emerged as a new distribution channel in the insurance value chain. During the period since a regulation on web aggregators was passed,<sup>63</sup> the count of registered web aggregators increased from 11 in 2013 to 22 in March 2021.<sup>64</sup> These are now functioning as platforms for insurance products from multiple insurers and providing information about product features, benefits, price, claim settlement ratio, coverage and so on, along with a comparison of insurance products. The shift toward digital channels for selling insurance policies has gained significant popularity during the COVID-19 pandemic. Sales data supports this sentiment; for instance, India's largest online insurance aggregator, PolicyBazaar, reported a doubling of health insurance sales on the platform between March and May 2020.<sup>65</sup> Additionally, Indian insurers responded quickly to the pandemic by tying with payment apps such as PayTM and PhonePe and with e-commerce apps such as Flipkart and Amazon to distribute their insurance products. In a survey conducted by Swiss Re in late 2020, a majority of respondents said they preferred buying insurance digitally, especially through payment apps and e-commerce websites, due to heavy usage of such platforms since demonetization in 2016.<sup>66</sup>

According to IRDAI's annual report for 2020–21,<sup>67</sup> market share of private insurers increased slightly to 35.86% in FY 2021 from 33.78% in FY 2020. This was primarily attributed to the state-owned LIC's dependence on agents, who have found it difficult to approach prospective customers amid lockdowns after the pandemic struck. In contrast, nimbler private players have taken advantage of alternative sales channels. Moreover, in FY 2021, premiums for life insurance policies sold through web aggregators and online channels rose above 2%, from around 1% in FY 2020.<sup>68</sup>

### 3.2 EMERGING TECHNOLOGIES

Technology advancement affects organizations across their business processes, and the insurance industry is no exception. India's insurance industry is experiencing the emergence of innovative technologies, which are improving operational efficiency and customer experiences. Many insurers have been deploying technologies including artificial intelligence, cloud-based solutions, and blockchain technology to transform the insurance business.

Additionally, with the use of advanced technologies such as artificial intelligence (AI), machine learning (ML), the internet of things (IoT), and cloud services, insurtech companies have not only improved several processes but also

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<sup>62</sup> *Going Digital: Insights to Optimise Consumer Appetite for Online Insurance in India*, Swiss Re Institute, November 2020, <https://www.swissre.com/dam/jcr:e6d179df-ae07-4985-a5ff-d399b7462ef9/swissre-institute-digital-platform-solutions-insurance-india.pdf> (accessed on June 30, 2022).

<sup>63</sup> Insurance Regulatory and Development Authority of India (Insurance Web Aggregators) Regulations, 2017, amended up to October 30, 2019, IRDAI, <https://www.irdai.gov.in/> (accessed on June 30, 2022).

<sup>64</sup> IRDAI annual report, 2020–21, IRDAI, <https://www.irdai.gov.in/> (accessed on June 30, 2022).

<sup>65</sup> "Four Reasons Why Health Insurance Saw a Big Jump in Demand in Last 10 Months: Policybazaar," *Economic Times*, January 27, 2021, <https://economictimes.indiatimes.com/wealth/insure/health-insurance/4-reasons-why-health-insurance-saw-a-big-jump-in-demand-in-last-10-months-policybazaar/articleshow/80477250.cms> (accessed on June 30, 2022).

<sup>66</sup> Subrata Panda, "Payment and E-commerce Most Sought When Buying Insurance Online: Swiss Re," *Business Standard*, January 13, 2021, [https://www.business-standard.com/article/pf/payment-e-commerce-apps-most-sought-when-buying-online-insurance-swiss-re-121011300948\\_1.html](https://www.business-standard.com/article/pf/payment-e-commerce-apps-most-sought-when-buying-online-insurance-swiss-re-121011300948_1.html) (accessed on June 30, 2022).

<sup>67</sup> Annual Report, 2020–21, IRDAI, <https://www.irdai.gov.in/> (accessed on June 30, 2022).

<sup>68</sup> Ibid.



replaced a few.<sup>69</sup> For example, general insurance company Acko has developed a complete contactless onboarding process, and auto insurance renewals and claim assessment have been digitized under the AI inspection process.

### 3.2.1 ARTIFICIAL INTELLIGENCE/MACHINE LEARNING

Traditionally, underwriting, claim processing, fraud detection and risk assessment have been cumbersome, time-consuming, lengthy processes that reduced insurers' efficiency, and the insured often had a poor experience. More companies and distributors are using AI and bots to reduce the overall turnaround time of issuing policies. For instance, for health claims, relevant information is culled from all documents shared by a customer and then classified under categories such as discharge summary, doctor notes and pharmacy bills.<sup>70</sup> These assessments have improved the customer experience as well. Further, insurtech companies have built capabilities to underwrite underpenetrated segments, such as crop and property insurance, by building rich data repositories and advancing predictive models. CropIn, an Indian player enabling assessment for crop insurance, has covered over 2 million farmers and over 6 million acres of farmland across 52 countries. It processes farm-related information by combining ML, satellite monitoring and weather analytics to provide customized reports and information for use by insurance firms.<sup>71</sup>

According to a November 2021 research report by INDIAai,<sup>72</sup> data and data types have increased exponentially with the increase in the number of customers, types of customers, insurance products, claims and even fraud cases. The analysis of this data has become a cumbersome task for all insurance service providers. Even with digitization, the problem has not been mitigated, and the amount of manual intervention has doubled over the years.<sup>73</sup> Many insurance providers, such as Max Life and Edelweiss General Insurance, are developing in-house AI/ML models and are continually digitizing their internal data by improving data capture at each level of insurance operations. Additionally, an Indian technology private company, Arya.ai,<sup>74</sup> has pioneered the use of AI/ML in financial services. It has developed services such as Libra, which automates key functions in the insurance sector such as an AI underwriting process for a life insurance provider to transform the complex underwriting journey to a simple, automated, real-time process. The seamless and real-time underwriting decision system processes policies in less than three minutes.

### 3.2.2 INTERNET OF THINGS

Insurers have become more connected and aware through the rapid adoption of IoT, which links the physical devices embedded with sensors that connect and exchange data with other devices and systems over the internet. In some cases, insurers have used IoT to minimize risks, but this remains in a developing phase. For instance, in 2022, ICICI Lombard General Insurance has started deploying IoT to track risks to marine cargo and ensure that

<sup>69</sup>T. Radhakrishna, "e-Gov Trends: India Gears Up for Next-Gen Insurance Solutions Leveraging InsurTech," *Economic Times*, April 10, 2022, <https://government.economictimes.indiatimes.com/news/governance/e-gov-trends-india-gears-up-for-next-gen-insurance-solutions-leveraging-insurtech/83943916> (accessed on June 30, 2022).

<sup>70</sup>"How Digitalization Has Smoothened the Insurance Buying Process," *Outlook*, Jan 2, 2022,

<https://www.outlookindia.com/website/story/business-news-how-digitalisation-has-smoothened-the-insurance-buying-process/407771> (accessed on June 30, 2022).

<sup>71</sup>Alpesh Shah, Pranav Mehrotra, Shaleen Sinha and Jitesh Shah, *India Insurtech Landscape and Trends*, BCG, February 2021, <https://web-assets.bcg.com/9e/50/a96580d94cf18041ec69c4473328/bcg-insurtech-report.pdf> (accessed on June 30, 2022)

<sup>72</sup>INDIAai is the national AI portal of India. The website is a joint initiative of MeitY, NeGD and NASSCOM.

<sup>73</sup>"75@75: India's AI Journey," Ministry of Electronics and Information Technology, Government of India, <https://www.meity.gov.in/writereaddata/files/75-75-India-AI-Journey.pdf> (accessed on June 30, 2022)

<sup>74</sup>Arya.ai is the first autonomous AI operating platform built for financial services to expedite enterprise-level adoption of autonomous systems.

firefighting systems are working.<sup>75</sup> The well-connected world and the advent of digital technologies mark the dawn of a data-driven era and enable insurers to make judicious decisions and reap financial rewards. Moreover, ICICI Lombard has also developed an IoT-based health check facility for its corporate customers.

An example of applying IoT to insurance involves the use of telematics—devices that transmit information over long distances, which leverages a wide range of ML algorithms. Some insurers have used telematics to support segmentation of vehicle users through usage-based insurance (UBI) for motor insurance. These “pay as you drive” or “pay how you drive” schemes are based on data gathered from the driver and devices in the insured vehicle. Bajaj Allianz General Insurance was the first insurer to launch usage-based car insurance using a telematics device in India, with a pilot in May 2020. The company has recently introduced a new insurance policy called Drive Smart, which, at the time of policy renewal, will fix the insurance price based on the car’s usage details. The mileage and driver’s behavior are tracked through an odometer or an in-vehicle telematics device installed into a specific port in the car. Telematics-based car insurance is at a nascent stage in India.

### 3.2 PRACTITIONERS’ OPINIONS ABOUT INNOVATION ADOPTION

The insurance industry practitioners we interviewed shared their views on areas in which their companies are currently innovating—particularly consumer experience improvements, online platforms, risk management and value chain enhancements. In general, practitioners explained how their insurance companies have been innovating, based on business requirements, customer needs and operational efficiency.

The business function of ERM is embedded in the structure of the insurance companies and mainly led by the chief risk officer. Some companies have risk champions (such as process experts and model owners) who assess risks, measure their overall impact on the organization, and classify them as low, medium and high.

Many practitioners stated that their organization participates in the regulatory sandbox proposed by the IRDAI in May 2019 exposure draft to provide insurance companies with an environment conducive to experimenting and carrying out innovation with a safe approach. For this purpose, insurers have an innovation team or sandbox committee that develops products. For example, pricing models for life and health insurance could be based on health profiles tracked through wearable fitness trackers, under co-pay model the percentage of their co-pay could be decided based on the engagement level of insured on the health platform (AI-based apps) offered by insurer, and so on. Or instead of setting the premium of a motor insurance policy based on the model of the vehicle, the sandbox could develop a method to charge based on the number of kilometers or amount of time the vehicle is driven.<sup>76</sup>

Further, insurers have been in talks with IRDAI, as the premium under UBI policy would be risk based (dynamic, related to drivers' behavior and driving patterns) while current capital adequacy calculations are factor based, which affects the calculation of premium charged and reserves to hold for such policies. Also, insurers have been discussing with regulators the need for a risk-based capital approach for wide distribution of such products. Practitioners expressed that multiple teams operate under the risk management umbrella, and in consolidation, they work as an ERM function in most insurance companies. To embrace innovation and enable efficient processes, the ERM function must be stable and robust. There is a need for regular risk assessment and an ongoing monitoring

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<sup>75</sup> Mayur Shetty, “ICICI Lombard Uses IoT to Cut Risks in Commercial Covers,” *Times of India*, February 16, 2022, <https://timesofindia.indiatimes.com/business/india-business/icici-lombard-uses-iot-to-cut-risks-in-commercial-covers/articleshow/89601208.cms> (accessed on June 30, 2022).

<sup>76</sup> Amitava Chakrabarty, “Sandbox Insurance: How This Regulatory Reform Would Benefit Customers,” *Financial Express*, February 27, 2020, <https://www.financialexpress.com/money/insurance/sandbox-insurance-how-this-regulatory-reform-would-benefit-customers/1883232/> (accessed on June 30, 2022).

framework. Careful assessment of key risk insurance factors and partnership with insurtech firms are enablers of innovation.

Industry practitioners indicated the use of technology-aided assessment models to increase operational efficiency. A few mentioned the deployment of drones, coupled with conventional claim assessment methods, for speedy settlement of crop insurance claims. This could also enhance the accuracy of granular-level claim assessment even during calamities where human intervention may not be possible. Many practitioners indicated that their insurance companies are planning to invest in AI/ML and big data for better risk modeling and risk identification. Others are adopting and increasing AI/ML usage in the insurance value chain, including underwriting activities, the claim settlement process and product management.

Some practitioners mentioned the use of wearable and/or portable devices in insurance. The IRDAI's health insurance regulations recognize the role of wellness in risk assessment and product design. In the context of both health insurance and life insurance, wearable devices could be used to measure personal fitness or help insured persons incorporate a healthy lifestyle, among other possibilities.

The regulator, IRDAI, has been encouraging insurance companies to use these wearable devices. Health insurance companies are using health apps and wearables to engage with customers. In addition to providing information related to policy benefits and access to network hospitals, the devices also measure body mass index, blood sugar, the number of steps walked, and so on, which is helpful for engaging customers.

### 3.2.1 INNOVATION AND INVESTMENT JOURNEY

Practitioners also discussed the response of the Insurance Amendment Bill among insurers, which the government of India passed in March 2021 to increase the limit on foreign direct investment (FDI) in the insurance sector from 49% (the existing level) to 74%. This change has received a tepid response from foreign insurers even after one year, as only few have used this window to cross the 49% gate. Practitioners cited various reasons for that, including that the government has left the top position of IRDAI vacant for 10 straight months since May 2021—a scenario in which joint venture contract clauses among insurers may get postponed for approvals from IRDAI for months. Another reason they cited is that Indian insurers want the majority stake in the firm, which impedes foreign insurers that want to increase their investment beyond 49%.

Interviewed practitioners also provided overviews of the type of innovations their organizations will need in the next five years, as summarized in Table 5. For the short term (the next one to two years), practitioners identified innovation, automation and evolving the ERM function as the key focus areas. For the medium term (three to five years), practitioners are focusing on technological developments and business model factors, such as AI/ML adoption and digitization.

**Table 5:**  
**INNOVATION ROAD MAP FROM PRACTITIONERS**

Short-Term Innovation (Next 1–2 Years)	Medium-Term Innovation (Next 3–5 Years)
<ul style="list-style-type: none"> <li>Expansion of the risk management and internal control system to effectively manage risks, with insurtech and the continuously evolving ERM function being imperatives</li> <li>Investment in technology-aided assessment models and innovation for better products</li> </ul>	<ul style="list-style-type: none"> <li>Use of insurtech to improve overall customer interaction and experience</li> <li>Adoption of regulatory tools such as the regulatory sandbox to fast-track innovation</li> <li>Investment in bringing automation to other areas of the insurance value chain, such as underwriting, core policy administration systems, risk management and claims</li> </ul>

<ul style="list-style-type: none"> <li>• Adoption of digitization and automation initiatives for repetitive tasks</li> <li>• Development of solutions using AI/ML models (e.g., reducing the number of policies being lapsed)</li> <li>• Monitoring of consumer behavior on a real-time basis</li> </ul>	<ul style="list-style-type: none"> <li>• Adoption of AI/ML to shorten the claim settlement cycle, detect false claims and flag fraudulent activities</li> <li>• Develop asset/liability management (ALM) systems to deal with duration match, profitability and product segmentation issues</li> </ul>
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Source: Interviews with practitioners.

### 3.2.2 INNOVATION AND EMERGING ERM BEST PRACTICES

As mentioned earlier, insurers in India are looking forward to the fundamental shift toward trends like IoT, big data, blockchain, AI/ ML and other technology advancement. They must set up risk management functions across their business structure to identify effective changes in the risk drivers and ways to mitigate or combat the underlying risk. Innovative business models, customer-centric approaches, product differentiation and efficient distribution channels are key focus and investment areas for the insurers. The key insurance risk factors the ERM function is focused on during the innovation process in India is depicted in Figure 4.

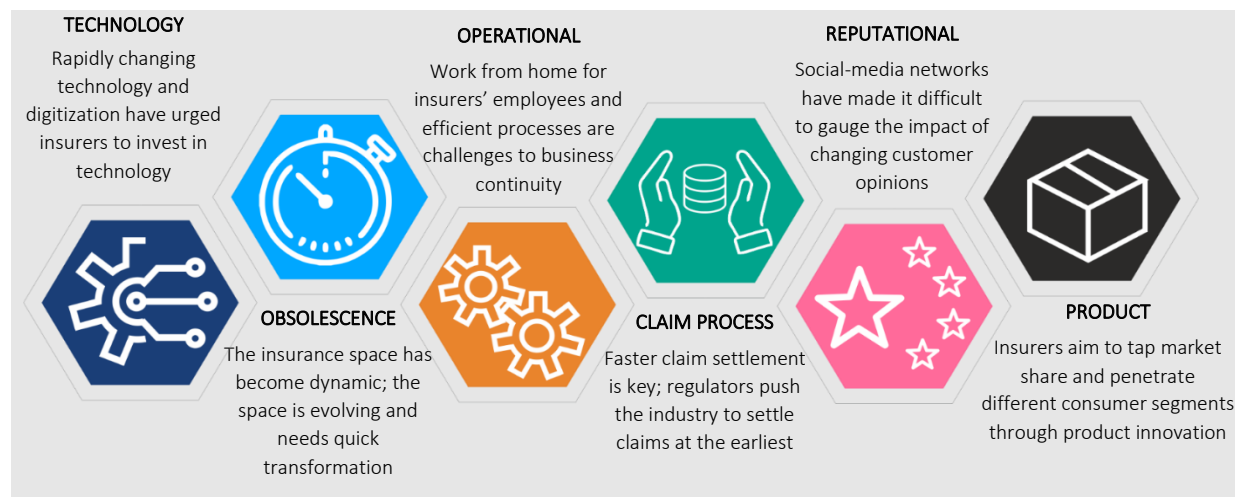
Some practitioners mentioned that their organization has built risk metrics for risk factor discovery, and once a risk is identified, it is assessed for severity and labeled as low, medium or high. Once the severity is defined, the risk management function puts forward a strategy to mitigate the risk. Additionally, insurers are using nontraditional variables, such as a customer's credit score, to sell policies in a targeted way or customize the product. For instance, insurers use machine-learning algorithms to target persons with high credit/CIBIL scores,<sup>77</sup> offering them high-end insurance products or products that cater to such customers' needs. For example, they might offer unit-linked insurance plans (ULIPs) to customers with high scores, who will be more likely to buy investment-oriented insurance products.

Many insurers have partnered or collaborated with insurtech and fintech firms to drive changes in the insurance market. Insurers and insurtechs are collaborating on various important aspects, such as product simplification and customization, better customer experience, overall claims assistance, customer awareness and tools for helping customers make an informed decision. With the growing importance of innovative product constructs and offerings, insurers and insurtechs can come together to strive further for the customer. The niche expertise of insurtechs and the distribution capability of insurers are ingredients of a recipe for success. In India, for instance, Bajaj Allianz partnered with Toffee Insurance to launch mosquito insurance, recognizing the highly endemic nature of diseases like malaria and dengue in India and thus tapping into a specific market.

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<sup>77</sup>A CIBIL score is a three-digit numeric summary of someone's credit history, rating and report. Scores range from 300 to 900. The closer a score is to 900, the better the credit rating is.

**Figure 4:**  
KEY INSURANCE RISK FACTORS THE ERM FUNCTION FOCUSES ON DURING THE INNOVATION PROCESS IN INDIA



Source: Interviews with practitioners.

Additionally, practitioners identified how they assess risk factors' relevance to their companies, as summarized in the following table.

**Table 6:**  
CATEGORIES FOR RATING RISK FACTORS AT PRACTITIONERS' COMPANIES

Item	Change to Insurance Business by Item
Impact	<ul style="list-style-type: none"> <li>• <b>Low.</b> Limited or no impact on the insurance business</li> <li>• <b>Medium.</b> Potentially material impact on the insurance business</li> <li>• <b>High.</b> Material or relevant impact on the insurance business</li> </ul>
Speed	<ul style="list-style-type: none"> <li>• <b>Radical.</b> A rapidly or exponentially changing business environment that affects the insurance business</li> <li>• <b>Incremental.</b> Slowly or linearly changing business environment</li> </ul>
Direction	<ul style="list-style-type: none"> <li>• <b>Positive.</b> Expected positive impact on the insurance business</li> <li>• <b>Negative.</b> Expected negative impact on the insurance business</li> </ul>
Type	<ul style="list-style-type: none"> <li>• <b>Core.</b> Directly affecting the insurer's value chain activities, such as underwriting</li> <li>• <b>Peripheral.</b> Indirectly affecting the insurer's value chain activities, such as use of technology</li> </ul>

Source: Interviews with practitioners.

Product innovation is another space where insurers are heavily invested. Insurers are coming up with new offerings to address niche needs among the new age population to further advance insurance penetration and widen their customer base. For example, they mentioned addressing unmet demands through innovative constructs such as bite-size products including pet insurance, IVF, among others, and parametric insurance (a move from risk protection to risk prevention). As an example, practitioner mentioned the launch of Optimalsecure, a health insurance plan that restores up to 100% of the base sum insured for subsequent claims, for any illness or accidental hospitalization. This comes in handy when an insured individual exhausts the existing sum insured due to one or several claims.

Some practitioners mentioned data-driven innovation happening across the value chain. Insurers have started building rich data depositories and driving insights to build better underwriting decisions to target new segments and build sharper underwriting and pricing capabilities. For instance, some emerging insurers in India processes

farm-related information by combining machine learning, satellite monitoring and weather analytics to provide customized reports and information. Other examples given involved reimagining processes across distribution channels, customer service, onboarding, claims, renewal, issuance of digital policies and cashless hospitalization.

A continuously evolving claim process is another risk factor that practitioners brought to the table. The COVID-19 pandemic affected both life and non-life insurance companies, but the number of health claims saw a massive spike during the first and second wave of the pandemic. A robust claim risk management system would be required to incorporate unanticipated scenarios such as this. Insurers are focusing on building and deployment of artificial intelligence (AI), and machine learning (ML) based homegrown solution to revamp efficacy and validity of the claims. In addition, lessening of fraud by developing blockchain infrastructures, automated processes, and smoother communication to administer the process seamlessly via calls, email, and chatbots could further enhance the customer experience along with claim transparency. Success of these methods depends on the amount of data accessibility and feedback going back to the machine for subsequent learning on removing false positives. Further improvement could come from ERM oversight of the innovation process.

## Section 4: Business Environment

India is already home to one of the world's largest and fastest-growing bases of digital consumers and is digitizing faster than many mature and emerging economies, including solutions through the use of AI/ML. India has covered significant distance in its path toward becoming a digitally advanced country.<sup>78</sup>

The private sector has helped the breakthrough of making internet-enabled services easily accessible to many consumers by cutting internet data costs by 95% since 2013.<sup>79</sup> As a result, mobile data consumption per user grew significantly. This has led to the digitization of several services, such as retail services and financial services, including insurance, and access to target segments, like agricultural.

Due to cost reductions, since 2015, India's public sector has been a catalyst for digitization. For instance, the government has accelerated the ramp-up of Aadhar, the national biometric digital identity program, which issues 12-digit individual identification numbers on behalf of the government of India. As of 2019, over 1.2 billion people in India issued unique digital identity.

The COVID-19 pandemic further enhanced the spike of digital activities in India, offering insurance companies a vital new pathway to connect with new and existing consumers and new target segments. Indian consumers' extensive use of digital platforms and their preference to purchase insurance through them has taken a critical turn. Around 65% of Indian respondents to a recent survey said they are likely to use digital channels such as e-wallets, bank or insurance websites, and e-commerce platforms to purchase insurance in the future. Innovative partnerships between insurers and digital platforms will likely bridge the health protection gap in India, estimated at USD 369 billion.<sup>80</sup> Another positive development is the encouraging results from a study by Swiss Re, which highlights that since the onset of COVID-19 pandemic, consumers' awareness about health and well-being has increased, and people are adopting healthier lifestyles.<sup>81</sup>

Insurance business environment has witnessed a strong support from the government and regulator over the last few years. The government has launched several schemes to bring social security among the rural sections of society by providing banking and other financial services such as insurance services (see section 4.1). In addition to launch of standard products mandated by IRDAI for all insurers with simple features and standard terms and conditions to ensure that every individual, irrespective of their socioeconomic background, gets access to financial protection, there has been a rise in demand to cover residual risk such as coverage from pandemic, seasonal illnesses, etc.

Insurers in India have been making a significant use of emerging technologies such as AI/ML to bring the operational efficiency, claim management, and improving customer experiences. AI has been implemented in chatbots, which provide support to potential and existing customers by answering their queries and going digital has reduced the gap between a company and the customer. Additionally, insurers have been leveraging platforms such as social

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<sup>78</sup> *India's Trillion Dollar Digital Opportunity*, Ministry of Electronics and Information Technology (MeitY), February 20, 2019, [https://www.meity.gov.in/writereaddata/files/india\\_trillion-dollar\\_digital\\_opportunity.pdf](https://www.meity.gov.in/writereaddata/files/india_trillion-dollar_digital_opportunity.pdf) (accessed on June 30, 2022).

<sup>79</sup> Noshir Kaka, Anu Madgavkar, Alok Kshirsagar, Rajat Gupta, James Manyika, Kushe Bahl and Shishir Gupta, "Digital India: Technology to Transform a Connected Nation," McKinsey & Company, March 27, 2019, <https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/digital-india-technology-to-transform-a-connected-nation> (accessed on June 30, 2022).

<sup>80</sup> Abhinav Kaul, "Study says 65% of Respondents Keen on Buying Insurance Online," *Mint*, January 14, 2021, <https://www.livemint.com/money/personal-finance/study-says-65-of-respondents-keen-on-buying-insurance-online-11610609781634.html> (accessed on June 30, 2022).

<sup>81</sup> "Going Digital—Insights to Optimize Consumer Appetite for Online Insurance", *Swiss Re Institute*, November 2020, <https://www.swissre.com/dam/jcr:e6d179df-ae07-4985-a5ff-d399b7462ef9/swissre-institute-digital-platform-solutions-insurance-india.pdf> (accessed on June 30, 2022).

media websites, e-commerce channels such as flipkart and amazon, and tie up with online payment application to sell their insurance policies digitally, for more details see section 4.2. Furthermore, over the last two decades the insurance industry has been gradually opened-up by the government to foreign players. Domestic insurers have been facing a significant liquidity crunch at the times of pandemic and government took initiative to increase the FDI to 74% in March 2021 as a solution of it and making the market more competitive, driving the creation of new insurance products, increasing penetration in the Indian market (mainly the rural areas), and propelling growth for the sector. However, it has received a limited response so far (see section 4.3).

#### 4.1 PRODUCTS AND PILOT PROGRAMS

With an increasing number of people investing in insurance products to protect themselves financially during emergencies, the demand for insurance has increased across segments, especially for health and life insurance products.<sup>82</sup> To cater to this demand, insurers have started focusing on selling insurance products through a tele-medical process, which is the need of the hour, given the pandemic scenario. COVID-19 has increased manifold awareness about the need for protection. This is reflected in a measure called the India Protection Quotient (IPQ),<sup>83</sup> which measures the degree to which urban Indians feel protected from future uncertainties, on a scale of 0–100. Between the beginning of the lockdown in March 2020 and the announcement of viable vaccines in December 2020, the IPQ improved to 39 from 35, largely because of increased awareness and ownership of life insurance.<sup>84</sup>

Demand has also increased for products to cover residual risk, which is not covered by standard products. This coverage refers to protection from the pandemic and similar scenarios and against seasonal illnesses such as dengue. Since these products cater to specific needs and are decently priced, consumers seem to be attracted to them.<sup>85</sup> An example is the Corona Rakshak plan, a standard health insurance policy available for 3.5 to 9.5 months for a premium of INR 100 per month (USD 1.32 per month).<sup>86</sup> The price made it a feasible option for most of the population during the second and third wave of COVID-19, instead of them purchasing an entire health care plan.

The government also initiated the National Mission for Financial Inclusion (NMFII), or Pradhan Mantri Jan Dhan Yojana (PMJDY), in August 2014 to provide universal banking services for every household, based on the guiding principles of banking the unbanked, securing the unsecured, funding the unfunded and serving the unserved and underserved areas. A digital pipeline has been laid for the scheme's implementation by linking Jan-Dhan accounts with mobile and Aadhaar.<sup>87</sup> To move toward creating a universal social security system for all Indians, especially the poor and the underprivileged, the government were announced three ambitious Jan Suraksha schemes, or social security schemes, pertaining to the insurance and pension sector in Union Budget 2015–16. The schemes—Pradhan Mantri Suraksha Bima Yojana, Pradhan Mantri Jeevan Jyoti Yojana and Atal Pension Yojana—launched on May 9,

<sup>82</sup> "Indian Insurance Industry Overview & Market Development Analysis," IBEF, February 2022, <https://www.ibef.org/industry/> (accessed on June 30, 2022).

<sup>83</sup> This proprietary tool, developed by Max Life with Kantar, assesses how protected urban India is, based on attitudes, mental preparedness for future uncertainties, awareness, and ownership of life insurance product categories.

<sup>84</sup> "India Protection Quotient Moves up During Pre-COVID Times: IPQ 3.0 Survey. India Protection Quotient (IPQ) 3.0," NDTV, March 9, 2021, <https://www.ndtv.com/business/india-protection-quotient-moves-up-on-heightened-awareness-survey-2386906> (accessed on June 30, 2022).

<sup>85</sup> "5 New Trends that will Shape Insurance Industry in 2021," *Financial Express*, February 11, 2021, <https://www.financialexpress.com/money/insurance/5-new-trends-that-will-shape-insurance-industry-in-2021/2192643/> (accessed on June 30, 2022).

<sup>86</sup> Ibid.

<sup>87</sup> Pradhan Mantri Jan-Dhan Yojana (PMJDY) is a national mission for financial inclusion to ensure access to financial services—namely, banking/savings and deposit accounts, remittance, credit, insurance and pension—in an affordable manner. An account can be opened in any bank branch or business correspondent (Bank Mitra) outlet. PMJDY accounts can be opened with a zero balance.



2015, providing for life and accident risk insurance and social security at a very affordable cost. Under its financial inclusion project, the government started providing banking and other financial services, such as life and non-life insurance, to the rural population. It started by expanding the banking network to rural areas and then extended the reach of insurance facilities in rural areas.

In September 2018, the Ministry of Health and Family Welfare (MoHFW) launched Pradhan Mantri Jan Arogya Yojana (PMJAY)<sup>88</sup> under the Ayushman Bharat scheme. This scheme is fully funded by the government, and the cost of implementation is shared between the central and state governments. According to the National Health Authority, it is the largest health assurance scheme in the world, which provides a yearly assistance/health cover of up to INR 5 lakh (about USD 6,526) per family annually for secondary and tertiary care hospitalization to over 10.74 crore poor and vulnerable families. These families (about 50 crore beneficiaries) constitute the bottom 40% of the Indian population in terms of income.<sup>89</sup>

According to a report draft released by IRDAI in May 2021, around 65% of the Indian population resides in rural areas. To increase insurance penetration in rural areas, with special focus on agriculture and allied activities, the IRDAI has suggested setting up model insured villages. The idea behind the model village concept is to offer comprehensive insurance protection to all the major insurable risks that villagers are exposed to and make available coverage at affordable or subsidized cost. Coverage initiatives to promote insurance are not new; for example, a general insurance initiative launched in 2016 referred to as Pradhan Mantri Fasal Bima Yojana (PMFBY), supports production in agriculture by providing an affordable crop insurance product., PMFBY has helped improve insurance protection for crops in recent years. However, but many crops and cropped areas are outside the scope of the PMFBY and have remain uninsured.

Factors such as low financial literacy, poor awareness and complex documentation have limited the expansion of the insurance sector in rural regions, since most of the rural people traditionally not reachable without digital solutions and access to internet are not familiar with insurance as a concept and have not experienced the benefits of insurance. In the rural areas, agriculture and allied activities are the main occupations and the primary source of livelihood. The target segment of rural insurance consists largely of low-income households or individuals who have little savings and limited financial capacity. The key risks associated with the Indian agriculture insurance sector include uncertainty of the Indian seasonal rains, particularly the monsoon season leading to floods, failure of crops, uncertain crop yields and fluctuating prices, inadequate farmer support services, and the existence of predominantly small and marginal farm holdings, weak rural infrastructure, and low financial literacy the key risks and drivers associated with Indian agriculture insurance sector.

In October 2020, the IRDAI had mandated insurers across all the segments, including life and non-life (health and other general insurers), to launch the basic policies from January 1, 2021, with simple features and standard terms and conditions to ensure that every individual, irrespective of their socioeconomic background, gets access to financial protection. For example, Saral Jeevan Bima Yojana, a life insurance guarantee product, is a nonlinked, nonparticipating individual and pure-risk term life insurance plan, which pays out the entire sum assured to the policyholder's dependents in the event of the demise of the insured person within the policy term. There is only one exclusion under the policy (suicide), and the policy's premium depends on the risk associated with the policyholder. This scheme attempts to offer the benefits of life insurance to people who have not had access to term insurance due to restrictions of education, location or income proof, as well as to people who are first-time buyers of term insurance. The minimum sum assured under the Saral Jeevan Bima policy is INR 5 lakh (USD 6,526), while the

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<sup>88</sup> Prime Minister's People's Health Insurance Scheme

<sup>89</sup> "Ayushman Bharat: National Health Protection Mission," Government of India, <https://www.india.gov.in/spotlight/ayushman-bharat-national-health-protection-mission> (accessed on June 30, 2022).

maximum would be INR 25 lakh (USD 32,628). However, the premium rate differs from insurer to insurer and is eventually determined by factors such as age, income of policy buyer and gender.<sup>90</sup>

#### 4.2 OPERATIONAL EFFICIENCY: DIGITAL DISTRIBUTION CHANNELS AND CUSTOMER LOYALTY

Operational efficiency is the key to unlocking lower premiums. Insurance companies can automate simple processes to eliminate manual work and resource cost. Good data architecture can enable insurers to generate insights, assist in making business decisions, and reduce the number of errors and manual checkpoints. Most insurers have implemented e-claim services through web or mobile applications with a fully automated review process, streamlining the claim process.

The need for a sharper distribution strategy has never been more pressing, with digital disruption changing the business landscape across sectors and businesses since the onset of COVID-19. The pandemic made it imperative for insurers to connect with customers digitally when people could not come out of their homes.<sup>91</sup> Additionally, digital channels are being embraced for their convenience and transparency. Due to cost savings, time constraints and efficiency, consumers are shifting away from traditional in-person sales and services to digital platforms, where they can easily compare premiums and product features and receive instant responses. Many web aggregators have come up over the past few years that allow such comparisons; examples include PolicyBazaar, InsuranceDekho and ComparePolicy.

For over 65% of organizations in India across multiple verticals, such as banking, financial and insurance, health care, the primary drivers for using AI are improved operating efficiency to market with new products and services.<sup>92</sup> Insurers are using emerging technologies, including AI, big data analytics and blockchain to transform IT systems.<sup>93</sup> The benefit of using AI is widely accepted for leveraging insurtech. Errors are a common occurrence in insurance, and these errors arise mainly during the claim cycle. AI can increase efficiency by virtually negating human errors.

AI has been implemented in chatbots, which provide support to potential and existing customers by answering their queries. It has also been used to automate underwriting of insurance policies by evaluating information declared by a customer. Also, AI algorithms have been utilized to process relatively simple claims, which consumes time and effort. For instance, Reliance General Insurance deployed a video conversation feature to process simpler motor vehicle claims, to quicken claims processing.

Going digital is all about reducing the gap between a company and the customer. This can be achieved to a great extent with the help of an AI-enabled chatbot. The bot can help automate several repetitive and human-intensive touchpoints in the insurance industry to bring about operational efficiencies with a relatively high level of

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<sup>90</sup> Navneet Dubey, "10 Types of Standard Insurance Policies Spawned by Pandemic," *Mint*, April 6, 2021, <https://www.livemint.com/money/personal-finance/10-types-of-standard-insurance-policies-spawned-by-pandemic-11617638898018.html> (accessed on June 30, 2022).

<sup>91</sup> "The Changing Face of Insurance Distribution," *Financial Express*, January 12, 2021, <https://www.financialexpress.com/opinion/the-changing-face-of-insurance-distribution/2169014/> (accessed on June 30, 2022).

<sup>92</sup> "Most Indian companies want AI for improved productivity," *Mint*, May 28, 2020, <https://www.livemint.com/technology/tech-news/most-indian-companies-want-ai-for-improved-productivity-11590668478630.html> (accessed on June 30, 2022).

<sup>93</sup> Priyanka Sangani, "India's Insurance Industry Is Improving Efficiency Through the Use of New-Age Technology," *Economic Times*, August 30, 2019, <https://economictimes.indiatimes.com/industry/banking/finance/insure/indias-insurance-industry-is-improving-efficiency-through-the-use-of-new-age-technology/articleshow/70902516.cms?from=mdr> (accessed on June 30, 2022).

accuracy.<sup>94</sup> Most of these bots work on natural language processing, and they keep learning to improve their accuracy as they interact with more and more customers.

Over the past few years, several insurance companies in India have rolled out AI-enabled chatbots. Bajaj Allianz General Insurance, ICICI Lombard General Insurance, Aditya Birla Sun Life Insurance, PNB MetLife India Insurance and HDFC Standard Life Insurance, among others, are using bots for customer support or sales. These companies account for 8.62% of the life insurer market and 13.14% of the non-life insurer market.

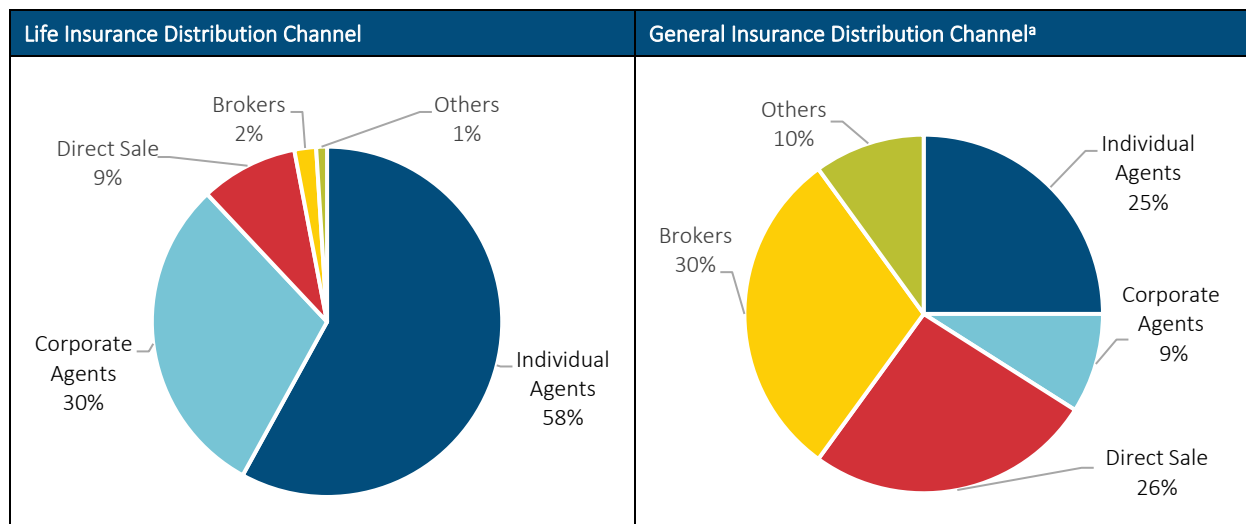
The biggest change is digitizing insurance and simplifying the process for customers that do not need to rely on intermediaries at any stage of the purchase journey. Digitization has enhanced customer experience while decreasing operational costs. It is also time-efficient. However, being at a nascent stage, this technology has yet to see its full potential discovered. Insurers will need to experiment on a larger scale to judge the performance of insurtech when fully functional.

#### 4.2.1 DIGITAL DISTRIBUTION CHANNELS

Marketing insurance services is complex and critical, due to periodic changes and the buying behavior of customers. Distribution channels are crucial for the success of the insurance industry. The liberalization of the insurance industry in India in 2000 opened the doors for new delivery channels besides traditional agents (see Figure 5). Ensuring that the product reaches the intended customer and the customer is convinced to buy requires an effective intermediary acting as a bridge between the seller and the buyer. Over time, regulators have allowed innovation in the intermediary space. A list of distribution channels as of 2021 is given in Table 7.

Figure 5:

#### DISTRIBUTION CHANNELS BY BUSINESS SECTOR



<sup>a</sup>Data for health insurance distribution channels not provided by IRDAI.

Source: Annual Report, 2020–21, IRDAI, <https://www.irdai.gov.in/>

<sup>94</sup> “The Rise of AI Enabled Chatbot aka Automated Agent in Insurance,” Clover Infotech, February 5, 2021, <https://www.cloverinfotech.com/blog/the-rise-of-ai-enabled-chatbot-aka-automated-agent-in-insurance/> (accessed on June 30, 2022).

Table 7:

## DISTRIBUTION CHANNELS DETAILS

Distribution Channel	Additional Details and Data as of March 31, 2021
<b>Insurance agents</b> More used by life insurers (see Figure 5)	<ul style="list-style-type: none"> <li>An insurance agent is an individual appointed by an insurer for soliciting or procuring insurance business, including business relating to continuance, renewal, or revival of policies.</li> <li>There were 24.55 lakh individual insurance agents in the life insurance business in India, whereas general and health insurance business had 14.22 lakh agents associated with them.</li> </ul>
<b>Corporate agents</b> More used by life insurers (see Figure 5)	<ul style="list-style-type: none"> <li>Corporate entities represent an insurance company and sell its policies. Usually, they are engaged in a particular business and sell policies to existing customers based on the situation. For example, a travel agent may offer a travel insurance policy or a vehicle dealer a motor insurance policy.</li> <li>There were 586 active corporate agents, of which 250 were banks and 336 were nonbanking finance companies, cooperative societies, limited liability partnership firms and other eligible firms. Bancassurance is a prominent distribution channel because of the trusted relationship between bankers and their clients. Customers view banks as legitimate to offer insurance policies as for other financial products.</li> </ul>
<b>Direct sale</b> More used by general insurers (see Figure 5)	<ul style="list-style-type: none"> <li>Direct sales from the general insurance business were close to 30%, compared with near 9% for life insurance, as of as of March 31, 2021.</li> <li>The direct distribution channel or self-directed channel refers to an insurer selling an insurance product directly to a consumer online or offline without an intermediary.</li> </ul>
<b>Brokers</b> More used by general insurers (see Figure 5)	<ul style="list-style-type: none"> <li>Insurance brokers represent the customer and are licensed to offer customer policies from any insurance company. They can provide expert advice on insurance policies suitable for the customer and are paid a brokerage fee by the company whose policy a customer chooses.</li> <li>Of the total 612 registered brokers, 486 were valid brokers (i.e., currently involved in providing their service), and the remaining 126 were not in force as of March 31, 2021<sup>95</sup>.</li> </ul>
<b>Others</b>	<ul style="list-style-type: none"> <li>The Indian insurance industry has other distribution channels as well—for example, micro insurance agents, insurance marketing firms, web aggregators, common public service centers-special purpose vehicles (CPSC-SPVs). However, their contribution to the insurance business is in development.</li> </ul>

Source: Annual Report, 2020–21, IRDAI, <https://www.irdai.gov.in/>

In individual life insurance businesses, insurance agents are the major contributor, with 58% of overall premium associated with this channel (see Figure 5). They are followed by the corporate agents (31%), direct sale (9%) and brokers (2%). For the general insurance business (excluding health insurance business), insurance brokers are the major contributor (30%), followed by direct sale (26%), insurance agents (25%) and corporate agents (9%).

#### 4.2.2 CUSTOMER LOYALTY

Insurance has traditionally been a product-centric business, focused on developing products for a given risk and delivering them in a cost-effective manner. However, social media and unprecedented access to information, such

<sup>95</sup> Due to various reasons such as license expiration, closure of their business.

as peer-to-peer product and service reviews, are giving consumers greater power as they become more informed and demanding.<sup>96</sup> To meet these changing needs, insurers are becoming nimbler, working faster, and delivering a superior customer experience. For instance, Cigna TTK's ProActiv Living Program has online health and wellness initiatives.<sup>97</sup> The program helps customers understand their health through checkups and targeted online health assessment, and it provides incentives in the form of health and wellness discounts. Customers can use the points they earn by participating in these initiatives to either increase their benefits or reduce their premium.

Five countries in Asia experienced higher medical trend rates than the regional average (8.8%) in 2021 due to factors such as rising real wages of medical staff, increase in healthcare access and medical advancement which includes new drugs and treatment. Among all developing countries in the Asia-Pacific region, India had the highest medical inflation rate of 14%, followed by China (12%), Indonesia (10%), Vietnam (10%) and the Philippines (9%).<sup>98</sup> As health care costs have risen, it is important to purchase health insurance plans, but it is equally important to invest in wellness and preventive health care to remain fit. Seeing the importance of preventive health care and encouraging healthy lifestyles, many insurers have started using wearables in their health insurance plans. For instances, Bharti AXA General Insurance Company launched the Bharti AXA Wellness Cuppa portal under its Health Advantage plan. Through this, policyholders can access the gamut of wellness features and services at one place. Apart from health rewards, some features include video/teleconsultation, pharmacy and diagnostic services, online chat with doctors, appointment scheduling, doctor on call and medical second opinion. Some insurers use external motivators, such as reward, monetary discounts, and digital badges, as incentives for customers to adopt a healthier lifestyle.

To guard against losing the trust and faith of customers, IRDAI is trying to streamline and standardize its insurance plans. Further, it is trying to make health insurance products more customer centric.<sup>99</sup> Keeping the needs of customers in view, the regulatory body has guided all insurers to completely standardize all the exclusions in a health insurance cover in accordance with the policy terms and conditions.

Insurers have developed systems to advise agents on products tailored for specific customers, depending on their history with the insurer and income band. For instance, Bajaj Allianz Life Insurance has a mobile app to hire agents. This helps with training, exams and licensing. It onboarded 15,700 consultants digitally in the past year, which cut processing time by half.

New-age insurance firms are leveraging technology to challenge old-economy players. For instance, Digit Insurance, a two-year-old insurer that focuses on creating smaller-value products, is using blockchain-based systems at the

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<sup>96</sup> "Making Insurance Customer-centric," *Hindu Business Line*, January 16, 2018, <https://www.thehindubusinessline.com/catalyst/making-insurance-customercentric/article9059936.ece> (accessed on June 30, 2022).

<sup>97</sup> Cigna, "Pharmaceutical and Professional Services Industries Outrank Retail and Telecom Sectors in Employee Well-Being Efforts," *Business Wire India*, November 6, 2015, <https://www.businesswire.com/news/home/20151106005024/en/Pharmaceutical-and-professional-services-industries-outrank-retail-and-telecom-sectors-in-employee-well-being-efforts> (accessed on June 30, 2022).

<sup>98</sup> "Health Perk's Costs to Rise 15% for Companies, Finds Report," *Times of India*, April 26, 2022, <https://timesofindia.indiatimes.com/business/india-business/health-perks-costs-to-rise-15-for-cos-finds-report/articleshow/91083681.cms>; Niladri Battacharya, "India's Employer-Sponsored Medical Benefit Costs Expected to Increase by 15% in 2022," *Marsh*, April 12, 2022, <https://www.marsh.com/in/about/media/asia-employer-sponsored-medical-benefit-costs-expected-to-increase.html> (accessed on June 30, 2022).

<sup>99</sup> "Guidelines on Standardization of Exclusions in Health Insurance Contracts," IRDAI, September 27, 2019, <https://www.irdai.gov.in/admincms/cms/whatsNew/Layout.aspx?page=PageNo3916&flag=1> (accessed on June 30, 2022).

back end to speed up claims processing. It has already reduced time taken to service a mobile-phone damage claim to a few hours from about 25 days.<sup>100</sup>

### 4.3 FOREIGN-OWNED INSURANCE COMPANIES

In this section there are two main topics covered, first how the foreign direct investment limit has been increased gradually from 26% at the time of liberalization of insurance industry in India to 74% in March 2021. Key trends in mergers and acquisitions and briefs the response of the rise in FDI limit among the insurers (see Table 9). And second, the captive office topic, and how foreign business engagement liaise with local business entities in India to develop business partnerships.

#### 4.3.1 CONSOLIDATION THROUGH MERGERS AND ACQUISITIONS (M&A)

The insurance market has seen a robust increase in mergers and acquisitions since globalization in 2001. Further, consolidation of the insurance sector has accelerated significantly, since it has become difficult for smaller players to generate adequate income from core businesses following the pandemic.

For small and medium-size players in the insurance sector, the health crisis brought on by the pandemic has reduced the availability of capital and financial resources, especially those required to meet liquidity and minimum capital requirements. To survive, many firms have expanded through M&A to consolidate economic power with other companies, mostly from the banking sector. Tighter regulations, such as a minimum solvency margin of 150%, strict licensing, and minimum paid-up equity capital (USD 13.06 million), rolled out in recent years have also driven some promoter divestments, prompting bigger players who have chosen to remain in the insurance space to increase their buyout activities. In the future, digitization and AI will be at the forefront of product innovation and distribution in the insurance sector. Hence, an increase of collaboration with insurtechs could also result in inorganic growth. Such partnerships or acquisitions will lower costs for the insurers, in terms of both capital investment and technical know-how.

Several key trends are increasing interest in M&A:

- **Divestments by promoters.** Promoter divestments have been a consistent trend in the industry due to diversion of promoters' capital toward core businesses or to cash in, given a bleak industry forecast. Many private players, including Aviva and ING, exited their operations early, gave up on joint ventures or sold their businesses to strategic players. The proposed budgetary increase in the FDI limit to 74% is further fueled by some state-owned banks getting directions from the government to sell their noncore assets. For example, on June 4, 2020, one of HDFC Standard Life Ltd.'s largest promoters, Standard Life Investments, offloaded 1.98% (40 million shares) of its stake to other major funds, including Capital Group World, Aditya Birla Sun Life Mutual Fund, Fidelity Investment Funds, Nomura Funds Ireland PLC, Capital Group World and Vanguard Funds Public Ltd.<sup>101</sup>
- **Investments by insurance promoters.** Apart from direct offloads to the stock market or private equity, insurance promoters have been investing through mergers. For example, on August 22, 2020, ICICI

<sup>100</sup> "How to Improve Operational Efficiency with InsurTech?," Acko, July 22, 2021, <https://www.acko.com/articles/general-info/how-to-improve-operational-efficiency-with-insurtech/> (accessed on June 30, 2022)

<sup>101</sup> "Standard Life Sells 1.98% in HDFC Life Insurance," *Business Standard*, June 5, 2020, [https://www.business-standard.com/article/companies/standard-life-divests-1-98-stake-in-hdfc-life-for-rs-1-986-crore-120060500029\\_1.html](https://www.business-standard.com/article/companies/standard-life-divests-1-98-stake-in-hdfc-life-for-rs-1-986-crore-120060500029_1.html) (accessed on June 30, 2022)

Lombard General Insurance Company announced a merger with Bharti AXA General Insurance Company Ltd. through a share swap transaction, forming the nation's third-largest insurance venture.<sup>102</sup>

- **Bigger opportunities for private equity.** Numerous private-equity investors are acquiring stakes in insurance companies in lieu of a profitable exit in two to five years. PE investors have a much larger window, now that the maximum permitted stake of foreign investors is 74%. Key private equity investment by in insurance companies since 2016 is in Table 8.
- **Insurtech acquisitions and development of digital channels.** Insurtech, big data and extensive use of AI and ML have disrupted the insurance industry. Better digital channels to reach and engage customers can reduce underwriting costs and time. The insurtech space in India has recorded a funding of approximately USD 800 million in 2021, from USD 290 million in 2020.<sup>103</sup> Acko and Digit, two general insurance companies, received unicorn status in India.

**Table 8:**

**PRIVATE EQUITY INVESTMENT IN INSURANCE COMPANIES**

Year	Insurer	Buyer	Seller	Stakes Sold	Approximate Valuation of the Insurer (million USD)
Q3 2016	SBI Life	KKR/Temasek	SBI	3.9%	6,015
Q3 2018	IndiaFirst Life	Warburg Pincus	Legal and General (UK)	26.0%	357
Q4 2019	SBI Life	Carlyle	BNP Paribas	9.0%	6,735
Q4 2019	PNB Metlife	Oman India Joint IF	J&K Bank	2.0%	1,176
Q1 2020	Religare Health Insurance Co Ltd	Trishikhar Ventures LLP	Religare	6.39%	34
Q4 2021	GIC Pvt. Ltd.	SBI Life Insurance	BNP Paribas	1.675%	200
Q1 2022	Ageas Federal Life Insurance Company	Ageas	IDBI Bank	25%	76
Q1 2022	Future Generali India Insurance	Generali	Future Group	25%	153

**Source:** "SBI Life Sells 3.9% Stake to KKR, Temasek," *Economic Times*, December 9, 2016, <https://economictimes.indiatimes.com/>; "Warburg Pincus Buys Legal & General's 26% Stake in IndiaFirst Life for Rs 710 cr," *Economic Times*, June 19, 2018, <https://economictimes.indiatimes.com/>; Ankit Doshi, "Carlyle Picks Up SBI Life Stake in Biggest India Investment," *VCCircle*, March 1, 2019, <https://www.vccircle.com/carlyle-buys-9-stake-in-sbi-life-insurance>; "J&K bank Sells 2% Stake in PNB Metlife to Oman India Fund," *Economic Times*, April 12, 2019, <https://economictimes.indiatimes.com/>; "CCI Approves Stake Buy in Religare Health Insurance by Trishikhar Ventures," *Economic Times*, April 3, 2020, <https://economictimes.indiatimes.com/>; Ageas, "Ageas Acquires Majority Stake in the Indian Life Insurance Joint Venture Ageas Federal Life," *Global Newswire*, May 20, 2022,

<sup>102</sup> Anirudh Lasker, "ICICI Lombard and Bharti AXA to Merge General Insurance Business," *Mint*, August 20, 2020, <https://www.livemint.com/companies/news/icici-lombard-bharti-axa-to-merge-general-insurance-businesses-11598068493984.html> (accessed on June 30, 2022).

<sup>103</sup> "India's Insurtech Funding Doubled in Last Two Years," *Economic Times*, April 27, 2022, <https://bfsi.economictimes.indiatimes.com/news/insurance/indias-insurtech-funding-doubles-in-last-2-years-report/91099845> (accessed on June 30, 2022).

<https://www.globenewswire.com/>; "Italy's Generali Becomes Majority Shareholder in Indian Non-life JV," *Business Today*, May 7, 2022, <https://www.businesstoday.in>

#### 4.3.2 FDI LIMITS

While consolidation may be a good idea to deepen insurance penetration, the joint-venture structure of insurance companies means the process of exit by any promoter, if the need arises, is complicated. It may involve complex discussions around valuation of the business opened for the private sector in 2000 after the enactment of the Insurance Regulatory and Development Authority Act of 1999 (IRDAI Act, 1999). The act permitted foreign shareholding in insurance companies to the extent of 26%, with an aim to provide better insurance coverage and augment the flow of long-term resources for financing infrastructure. FDI in the Indian insurance sector is allowed under the automatic route (the companies bringing in FDI must obtain the necessary license from the IRDAI). In 2015, the government hiked the FDI cap in the insurance sector from 26% to 49%. The government earlier allowed 100% FDI in insurance intermediaries. Intermediary services include insurance brokers, reinsurance brokers, insurance consultants, corporate agents, third-party administrators, surveyors and loss assessors.<sup>104</sup> Furthermore, parliament in March 2021 passed the Insurance Amendment Bill 2021 to increase the FDI limit in the insurance sector to 74% from 49%.<sup>105</sup>

The Ministry of Finance has positioned this increase to 74% as a solution to the liquidity crunch being faced by the insurance sector. More infusion of FDI and exercise of control over Indian insurance companies by foreign players (predominantly those with experience in the sector) will play a significant role in making the market more competitive, driving the creation of new insurance products, increasing penetration in the Indian market (mainly the rural areas), and propelling growth for the sector.<sup>106</sup> However, nearly a year after the government permitted higher FDI of up to 74%, insurers have given it a lukewarm response. Only a few insurers have used this window to increase stake in their Indian ventures; examples include Ageas Federal Insurance joint venture, where Ageas (a Belgian insurer) increased its stake from 49% to 74% in the fourth quarter of FY 2022, and the Future Generali Insurance joint venture, where Generali (an Italian insurer) increased its stake to 74% in the first quarter of FY 2023.

According to the annual report published by IRDAI for FY 2021, the percentage of foreign investment in the share capital of life insurers is as shown in Table 9.

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<sup>104</sup> Anulekha Ray, "Budget 2021: Mega Boost! Govt to Increase FDI from 49% to 74% in Insurance," *Mint*, February 1, 2021, <https://www.livemint.com/budget/news/budget-2021-govt-to-increase-fdi-from-49-to-74-in-insurance-11612160550665.html> (accessed on June 30, 2022).

<sup>105</sup> "Finance Ministry Notifies Rules for Increased FDI in the Insurance Sector," *Mint*, May 21, 2021, <https://www.livemint.com/insurance/news/finance-ministry-notifies-rules-for-increased-fdi-in-the-insurance-sector-11621528712819.html> (accessed on June 30, 2022).

<sup>106</sup> "Revitalising Insurance," *Hindu Business Line*, September 1, 2021, <https://www.thehindubusinessline.com/opinion/revitalising-insurance/article36232761.ece> (accessed on June 30, 2022).



**Table 9:**  
**FDI INVESTMENTS**

Insurer	Foreign Investment (%)
<b>Life insurers</b>	
Ageas Federal Life Insurance Co. Ltd.	74%
Aditya Birla Sun Life Insurance Co. Ltd.	49%
Aviva Life Insurance Co. Ltd.	
Bajaj AXA Life Insurance Co. Ltd.	
SBI Life Insurance Co. Ltd.	43.44%
ICICI Prudential Life Insurance Co. Ltd.	38.62%
HDFC Life Insurance Co. Ltd.	34.55%
Bajaj Allianz Life Insurance Co. Ltd.	26%
Canara HSBC OBC Life Insurance Co. Ltd.	
Future Generali Life Insurance Co. Ltd.	
Max Life Insurance Co. Ltd.	5.17%
Life Insurance Corporation (LIC)	0.12%
<b>Non-life insurers</b>	
Future Generali India Insurance Co. Ltd.	74%
Bharti AXA Life Insurance Co. Ltd.	49%
IFFCO Tokio General Insurance Co. Ltd.	
Reliance Nippon Life Insurance Co. Ltd.	
Bajaj Allianz Life Insurance Co. Ltd.	26%
Tata AIG General Insurance Co. Ltd.	
IndiaFirst Life Insurance Co. Ltd.	

Source: IRDAI Annual Report 2020–21, IRDAI, <https://www.irdai.gov.in/>, “Italy’s Generali Becomes Majority Shareholder in Indian Non-life JV,” *Business Today*, May 7, 2022, <https://www.businesstoday.in>, “Ageas acquires majority stake in the Indian Life insurance joint venture Ageas Federal Life”, Globe Newswire, May 20, 2022, <https://www.globenewswire.com/>

#### 4.3.3 CAPTIVE OFFICES

A captive office refers to a local entity of a foreign-owned insurer that has established operations in India for a specific business function with the objective of using that functional team to support the parent foreign insurer.

Some foreign-owned insurance firms have shifted some of their actuarial work to India, making captive offices a notable trend in the Indian insurance environment.

Irrespective of the actuarial area of practice, the actuarial function is typically outlined by planned activities and expected productivity levels. Transferring some of these activities to a third party or moving them to a different location to optimize actuarial productivity is among the plausible business solutions to maintain competitiveness. Productivity pressure arises in a competitive market when the actuarial output needs to be produced with predictable cost, quality and efficiency so that an actuarial firm can retain and grow its market share footprint. A transfer of actuarial activities may involve outsourcing (using the same company with a local entity in that foreign location “captive” or a third party) or offshoring (moving production to another location).

The use of captive offices has not only given India’s practitioners an opportunity to collaborate with colleagues educated in foreign countries but also launches a discussion about the level of maturity of resources needed to support these shifted functions, along with other topics, including job security and intellectual property at the parent company.

In North America during the 1990s, ample discussion was taking place in four areas affecting the actuarial consulting field: downsizing, software, outsourcing and flexibility.<sup>107</sup> Back then, head counts in various companies declined because of outsourcing and the development of computers and software. Only those actuaries who were flexible enough to adapt to the changed environment maintained their jobs. Today, the areas affecting actuarial head counts have not changed fundamentally. Actuaries have found their niche in pillars where technology hasn’t emerged as a disruptive force—intellectual property, regulatory compliance, cutting-edge models and innovation. These actuarial functions are core and difficult to transfer.

As a part of the actuarial function transfer wave in the late 2000s, the idea was to replicate and capitalize on the outsourcing experience that other industries had acquired. Many actuarial consulting firms in various countries—the United States included—outsourced strategic operations to Argentina, China, India, the Philippines and Poland. Several multinational insurance companies have set a footprint in India with captives, joint ventures and other forms of local partnership.

The outsourcing of actuarial services is relatively new. However, far-reaching changes were witnessed during 2000 to 2020, especially in the identification, execution and differentiation of operating-process-oriented actuarial activities and value-added actuarial functions. Because of this trend, companies have increasingly recognized the value of the work performed by actuaries and their involvement in strategic positions, rather than in low-end activities, with candidates to be transferred using offshore or outsourcing solutions. At the same time, actuaries are fully aware they play a key role in generating value added.

#### 4.3.4 SPECIAL ECONOMIC ZONES (SEZ)

India was one of the first places in Asia to recognize the effectiveness of a special economic zone (SEZ). These have been established in India to promote trade and investment by enabling industries to produce and trade goods at globally competitive prices. SEZ locations are typically deployed by foreign companies, particularly insurers, looking to establish a footprint in India with captive offices. The Special Economic Zones Act of 2005 (SEZ Act) provides a mechanism for the establishment and operation of SEZs. In 2015, domestic and foreign insurance companies were permitted to set up international finance service center (IFSC) insurance offices in SEZs if they met certain conditions: prior approval from the IRDAI and continuous operations for five years with a satisfactory track record of

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<sup>107</sup> James R. Thompson, “The Consulting Response to the ‘90s,” *The Actuary* 27, no. 3, March 1993, pp. 7, 10.

regulatory and supervisory compliance.<sup>108</sup> The act was targeted to give insurance companies greater flexibility to operate and attract foreign investments. Additionally, it opens possibilities to manage costs better, leverage skilled talent and scale up the existing business.

#### 4.3.5 BUSINESS MODELS FOR FOREIGN INSURERS' FOOTPRINT

Researching and selecting a correct business model to define the type of insurance business is key to facilitating an effective functional team, particularly for technical areas, including actuarial and data science. This should be in sync with the company's objectives for outsourcing business functions. Accordingly, foreign insurers also look to outsource some of their operations to accelerate the operational efficiency in other geographies such as India. Foreign insurers' engagement with local business entities and operational aspects in India are detailed in Table 10.

**Table 10:**  
**FOREIGN INSURERS' ENGAGEMENT WITH LOCAL BUSINESS ENTITIES AND OPERATIONAL ASPECTS IN INDIA**

Engagements		Operational Aspects	
Type	Description	Location	Description
Build to operate	In the start-up phase, the outsourcer takes care of all the operations. At the end of the engagement, the insurer has the option to buy the unit that the outsourcer built.	On-site	The outsourcer provides its services in the same location as the insurer.
Captive unit	The insurer exercises the option to buy in the build-to-operate engagement or creates a business unit to execute its own operations in the other country.	Off-site	The outsourcer provides its services outside the insurer's location but in the same country.
Ongoing	The outsourcer and the insurer maintain an ongoing relationship, collaborating on a given process.	Offshore	The outsourcer provides its services from a different country.
Temporary	Engagement lasts for a fixed period of time, during which the outsourcer and the insurer collaborate on executing a given process.	Hybrid	The parties use a combination of on-site, off-site and offshore operations.

Outsourcers generally follow flexible practices. They could work with companies using a 100% offshore team or have a hybrid model, with offshore or on-site actuaries working together on the same project. In general, the engagement with an outsourcer consists of executing a specific segment of the operations that the company wants to outsource in a resource augmentation exercise. The type, magnitude and aversion to these risks are company specific. Analyzing each risk component is out of the scope of this report, but these risk dimensions should be fully identified, analyzed and mitigated before transferring the actuarial function. Some of the risks that need to be

<sup>108</sup> An IIO that has been granted a certificate of registration by the IRDAI is permitted to: (a) accept reinsurance business of all classes of business within the SEZ and from outside the country; and (b) accept reinsurance business from insurers operating in the 'domestic tariff area' (as defined in the SEZ Act) in accordance with the IRDAI regulations on reinsurance. The IIO is permitted to retrocede up to 90% of its reinsurance business. Further, IIOs are required to maintain an assigned capital of INR 10 crore.

carefully analyzed in the preparation phase by companies considering outsourcing as a business solution are listed in Table 11.

**Table 11:**  
**POTENTIAL RISKS FACED BY FOREIGN INSURERS WHEN ENGAGING WITH LOCAL ENTITIES IN INDIA**

Type of Risk	Description
Compliance	Contractual provisions with clients, federal regulations, confidentiality
Operational	Equivalent skill set access, quality standards, knowledge transfer
Human capital	Replacing staff who would be difficult and costly to attract again
Financial	Shareholder perception, market reputation, unforeseen costs
International	World economy developments, country-specific conflicts

#### 4.3.6 CREDIT RISK RATINGS AND ERM

Credit risk rating measures the credit risk of an entity or an opinion from credit agencies (for example, CRISIL, Fitch Ratings and ICRA Ltd.) regarding the entity's ability and willingness to fulfill its financial obligations completely. The assessment looks at industry risk, business risk (underwriting policy, business mix, market position, technological risk, operational) and financial risk (liquidity and financial flexibility) for the insurance company. Regulatory changes to tighten capital requirements would reduce the industry's core solvency ratio. The industry average comprehensive solvency ratios for the life and non-life markets were 2.78 and 2.54, respectively, for FY 2021.<sup>109</sup>

Rating agencies evaluate parameters such as fund infusion plans in line with business requirements, whether a company's solvency ratio complies with IRDA's stipulations, and the adequacy of the solvency margin. Insurers with above-average ratios are categorized as AAA, and insurers with ratios below the standard are rated B, C or D, according to the risk of default.

#### 4.4 PRACTITIONERS' OPINIONS ABOUT THE BUSINESS ENVIRONMENT

During the interview process, the Indian practitioners provided their views on how key risk factors could affect the insurance business. They also shared details about the impact, speed, direction and type of change, using the categories that were summarized in Table 6. These categories were useful for interpreting how practitioners qualified each risk factor according to its relevance to their own insurance company and business function.

According to our interviews, industry practitioners in India think the most relevant emerging risks for the business environment are disruptive technology (including digitization, telematics and social media), cyber/networks (in particular, cybersecurity), pandemic/infectious diseases (in particular, COVID-19), and online underwriting and claims processing (see Table 12). The perception of emerging risk varies between practitioners in India and those in North America. For example, practitioners in India consider disruptive technology as the top risk, while practitioners in the US mentioned climate risk as the top risk.

<sup>109</sup> IRDAI Annual Report, 2020–21, IRDAI, <https://www.irdai.gov.in/admincms/cms/uploadedfiles/annual%20reports/Annual%20Report%202020-21.pdf> (accessed on June 30, 2022)

**Table 12:**  
**EMERGING RISKS IDENTIFIED BY INDIAN AND U.S. PRACTITIONERS**

Ranking	Indian Practitioners	U.S. Practitioners
1	Disruptive technology	Climate change
2	Cyber/networks	Cyber/networks
3	Pandemic/infectious diseases	Pandemics/infectious diseases <sup>a</sup>
4	Online underwriting and claim process	Disruptive technology

<sup>a</sup>In 2019, disruptive technology was in the third position for the U.S. and Canada.

**Source:** For India, the risk ranking is from the practitioners interviewed in this report. The ERM study did not include risk ranking, but the authors have arranged the list in an order that reflects the average conclusion from the statements made by practitioners interviewed. For the U.S., the ranking is from *15th Annual Survey of Emerging Risks: Key Findings*, SOA Research Institute, January 2022, <https://www.soa.org/globalassets/assets/files/resources/research-report/2022/15th-survey-emerging-risks-key-findings.pdf>.

In the following sections, we provide additional details on opinions from the India practitioners pertaining to each emerging risk on top of their mind.

#### 4.4.1 DISRUPTIVE TECHNOLOGY: DIGITIZATION, TELEMATICS AND SOCIAL MEDIA

Digitization has contributed greatly to the resilience of both non-life and, to some extent, life insurance businesses, from distribution to sales and post-sales activities. It has prevented a stalemate from occurring because of restrictions in physical interaction during the COVID-19 pandemic. Practitioners also mentioned the use of virtual assistants, for example, LIC's Mitra, New India Assurance's BIMA Bot and National Insurance's NYRA. Chatbots are another such initiative where consumers can digitally get their questions answered within a few seconds. Online presence has reduced the turnaround time for several transactions and facilitated consumers' navigation through various products and services. Practitioners also mentioned that as the COVID-19 crisis has eased, insurers, reinsurers and brokers require accelerated digitization of operations, AI/ML-based solutions and powerful data analytics tools.

According to some practitioners, 85–90% of motor policies are sold online, but in some cases, customers want to have personal contact with agents and understand the products, particularly life insurance and retirement products. Interestingly, policyholders mostly purchase these directly from company websites (Figure 5 and Table 7). In contrast, for life and health insurance policies, although customers have preferred to purchase these online, they still require personal interaction with insurers to better understand the details of the policy they have purchased.

Uses of social media in the insurance industry go beyond the traditional marketing strategies and toward intelligent advertisements. Consumers use social media as a platform where they can search products, read reviews of the same or similar products, and even review a product. However, it has become difficult to gauge and understand the impact of social media on the reputation of a company and its products and services.

Practitioners indicated that digitization has brought in major disruption. Legacy and new-age technology-savvy companies are collaborating to go digital. The level of adoption of digital methods in the insurance industry is summarized in Table 13.

**Table 13:**  
ADOPTION STAGE OF DIGITAL SOLUTIONS, BY MARKETING APPLICATION

Area	Rates	Modeling	Sales	Market Segmentation	Consumer Experience
<b>Solution</b>	Telematics	AI/ML	Online distribution channel	Social media	Chatbot
<b>Stage<sup>a</sup></b>	Nascent	Nascent	Partial implementation <sup>b</sup>	Partial implementation	Partial implementation

<sup>a</sup>Stage is defined as the percentage of insurers in the Indian insurance sector who have adopted or use each solution for the given marketing application. Nascent means less than 10%; partial implementation means 10–60%; implemented means more than 60%.

<sup>b</sup>For general insurance, online distribution channels are fully implemented, but not for life and health.

Source: Interviews with practitioners.

Practitioners emphasized the use of telematics, especially in the motor insurance segment. Conventionally, the premium of motor insurance policies was calculated based on the model of the vehicle owned, among other factors. But telematics has enabled usage-based car insurance policies by helping to track driver behavior, distance traveled, average speed, fuel consumption, fuel efficiency, and so on. The insurer can collect this data and analyze it to calculate the appropriate insurance premium for an individual. This also works as an incentive to consumers to adopt safer driving habits.

Practitioners opined that, in 2022, the insurance market would reach a pinnacle of transformation and modernization in legacy systems. That would help companies launch new products rapidly; integrate widespread multiple channels, aiding consistency; and enable effective policy service and timely problem resolution, leading to enhanced customer experience and understanding.<sup>110</sup>

#### 4.4.2 CYBER/NETWORKS: CYBERSECURITY

Practitioners consider cybersecurity as having a high positive impact on the core of the insurance business, because it is bringing stronger ERM practices, including additional internal controls to the company, and strengthening their capability to better handle the data and, hence, to manage operational risk. They stated that the evolving business environment, work-from-home landscape, and involvement of technological solutions are driving the focus toward cybersecurity. Insurance companies are natural targets for cybercriminals because insurers possess substantial amounts of confidential and personal data. Concerns also revolve around not knowing where the next threat will come from. This makes it difficult to protect the business against cyberattacks or threats, especially if cybersecurity is not properly managed.

Insurers remain particularly vulnerable to highly targeted cyberattacks aimed at exploiting security weaknesses due to the amount of sensitive information insurers hold. Some practitioners have introduced innovative technology-led services, and have implemented necessary policies and procedures to detect, mitigate and prevent various cyberthreats. For example, some insurers set up information security committees to oversee governance, implementation of the security controls, and adherence to the information and cybersecurity policy. Other

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<sup>110</sup> Kamlesh Rao, "Life Insurance Industry Trends and Outlook 2022," *Business World*, January 9, 2022, <https://www.businessworld.in/article/Life-Insurance-Industry-Trends-And-Outlook-2022-/09-01-2022-417112/> (accessed on June 30, 2022)

practitioners have been developing a data governance framework to provide a set of principles and rules for managing and protecting data across the company.

#### 4.4.3 PANDEMIC/INFECTIOUS DISEASES: COVID-19

Before the COVID-19 pandemic struck, insurance companies across India were not well prepared to tackle a disruption of this scale. According to some practitioners, the severity of the pandemic has changed users' perception of insurance. It has created a deep sense of well-being among individuals and a demand for health care insurance across demographics in India.

Practitioners mentioned that ERM became crucial for insurers particularly during the pandemic. Regulators required insurers to set up business continuity plans and regularly test the plans in coordination with the department or function concerned. Proper planning and regular testing enabled insurers to continue their essential and critical processes. Adequate work-from-home connections were extended to employees to continue operations. Also, business continuity management provided regular inputs to the risk management committee, which then evaluated risks including strategic, operational, insurance, liquidity, credit, reputational, market, foreign exchange, reduction in new business, reduction in renewal business, asset-liability mismatch, reduction in yield, capital erosion and more.

The average cost of COVID-19 treatment in India was approximately USD 3,800–4,000 in private hospitals, and average hospitalization cost before COVID-19 was about USD 407.<sup>111</sup> In the U.S., the average cost to treat a COVID-19 patient varied from USD 51,000 to USD 78,000, based on the age of the patient, but earnings also are higher in the U.S.<sup>112</sup> The per capita income in India is USD 2,277, whereas the per capita income in the US is USD 69,287, which suggests that the substantial portion of the Indian population is vulnerable financially when it comes to hospitalization, as they lack any financial protection for health and must bear the medical cost out of their pocket, due to lack of awareness and suitably priced products. The pandemic has foregrounded the need to have a comprehensive health care insurance plan to meet unexpected medical expenditures.

Practitioners interviewed also expressed concern about potential fraudulent practices in situations where some hospitals could artificially inflating their charges if a patient is insured and insurers bear this excessive cost, hence potentially a large and sudden price increases that pose hardships on patients and insurers alike. It has become challenging for many health insurers to provide health insurance at an affordable price, and if they are under compulsion to keep the price low, they will need to consider imposing a whole lot of exclusions in the policy conditions. To counter such activities by the hospitals, insurers have been reaching agreements with hospitals to establish hospital networks across India where policyholders can be admitted to receive covered services, following the in-network and out-of-network concept used in other countries. This arrangement reduces some of the risks around medical bills and out-of-pocket expenses.

Practitioners interviewed also expressed concerns that new diseases or pandemics could change traditional insurance business models, initiating fundamental changes on the business side. Such changes in business model

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<sup>111</sup> Shagun, Ranju Dodum and Priya Ranjan Sahu, "Myth of Coverage: Household Burden of COVID-19 Treatment Was Several Times Higher than Government Spending," *Down to Earth*, January 2022, <https://www.downtoearth.org.in/news/governance/myth-of-coverage-household-burden-of-covid-19-treatment-was-several-times-higher-than-government-spending-81096> (accessed on June 30, 2022).

<sup>112</sup> Mallory Hackett, "Average Cost of Hospital Care for COVID-19 Ranges from \$51,000 to \$78,000, Based on Age," *Healthcare Finance*, November 2020, <https://www.healthcarefinancenews.com/news/average-cost-hospital-care-covid-19-ranges-51000-78000-based-age#:~:text=The%20average%20cost%20of%20hospital,analysis%20data%20from%20FAIR%20Health> (accessed on June 30, 2022).

might include decentralized insurance, updates to insurance products (such as travel insurance) and contractual insurance terms.

With the rise in demand for health products, insurance companies have introduced customized offerings and leveraged technology to speed up the end-to-end process. The following are some notable changes mentioned by the practitioners:

- **Telemedicine coverage.** Telemedicine can take the form of online or off-site medical consultations conducted through telephone, WhatsApp messages, video calls, online or any such digital platform. Telemedicine coverage has recently been introduced as part of typical health insurance plans.
- **Need for health care at a young age.** The pandemic has affected all age groups, creating more awareness about purchasing a health care plan early in life.
- **An increase in the coverage of medical illnesses.** The IRDAI mandated health care insurance companies to cover mental illnesses under their plans.

#### 4.4.4 ONLINE UNDERWRITING AND CLAIMS PROCESS

According to the practitioners, insurers need to accelerate the underwriting process to remain relevant to consumers, especially millennials. This can be done by automating the routine tasks and augmenting teams with emerging technologies and alternative data. Additionally, practitioners are developing internal solutions with AI/ML components, typically adopted by foreign parent companies and rolled out in the captive office in India to enhance the digital experience of consumers.

The portfolio of insurance is frequently monitored by the insurer's selection. It is increasingly becoming competitive, and rapid adjustments are facilitated to underwrite strategies. Given the scale of transformation induced due to the shift to online paradigms, the underwriting process and its revamping should be given high priority.

Practitioners also mentioned that improved online platforms have enabled faster processing of claims. AI/ML in the insurance industry is likely to evolve rapidly and help insurers find better solutions for claims. Currently, insurance providers are paying attention to the efficient claims management system, as the economy has started to recover from the impact of lockdowns and the pandemic. Some stated that a few insurers have facilitated submission of claims via online messaging and steps to reduce field visits by opting for alternatives such as image processing. Speed will emerge as a differentiator; companies will enhance the use of alternative data for better customer insights and rely on technological advancements and intelligent automation to enable faster turnaround time.

According to practitioners, to remain relevant in the current age, especially in the minds of millennials, insurers need to accelerate the underwriting process. This can be done by automating the routine tasks and augmenting teams with emerging technologies and alternative data.

#### 4.4.5 BUSINESS ENVIRONMENT AND SOME EMERGING ERM BEST PRACTICES

The ERM function has been integral to coping with emerging technological trends and disruption along the value chain. It has facilitated enhancement of internal processes, systems, structures, policies, tools and practices to deal with challenges arising from digital, technology and cybersecurity risk; online distribution channels; dynamic consumer behavior; and product differentiation.

The ERM function, in collaboration with other business functions, helps companies identify risks and mitigate them. As an example, digital solutions enhance efficiency and reduce the cost of transacting business (as a result of fewer physical touchpoints). Insurers are also adopting tech-savvy practices to become more customer centric.



The increasing involvement of digital channels means cybersecurity discipline assumes greater importance and becomes a part of the business's continuity planning. The ERM function would be instrumental in tracking and monitoring cyberthreats.

Moreover, new trends and modeling capabilities (data science, predictive modeling, big data and alternative data) have made insurers rely heavily on data. Rich data depositories and data warehouses are being constructed to study trends and customer segments. This has prompted companies to set up data security and privacy protection frameworks as a part of the risk management system. While data by itself is not a technology, it affects the use of technology.

Additionally, practitioners discussed that captive offices could be a powerful tool for an organization to increase the control of its risk while gaining greater financial flexibility and protection. Furthermore, practitioners interviewed discussed the opportunities and challenges faced by them at their captive offices.

**Table 14:**  
**KEY OPPORTUNITIES AND CHALLENGES FACED BY PRACTITIONERS IN CAPTIVE OFFICES**

Opportunities	Challenges
Immediate industry expertise	Dependence on stability and experienced subject matter experts difficult to find and attract
Effective cost structure	Building of industry knowledge/expertise but not infrastructure
Aligned value system and risk management philosophy	Integration of cultures, systems development, customer service, timing
No need to find corporate resources	Limited career paths for senior staff
People skills and talent availability	Repetitive tasks increase attrition risk – junior talent gets boredom and preference for regular change.

Source: Interviews with practitioners.

Practitioners in the insurance industry mentioned that in the next one to two years, insurers are likely to make heavy investments in acquiring, training and developing human capital. Talent availability, domain expertise, process champions and subject-matter experts in the ERM function are key to developing and implementing new regulations, and critical to the company's success. Practitioners highlighted the ongoing struggle to understand talent aspirations and differences between Generations X, Y and Z.

## Section 5: Insurance Regulatory Environment

The regulatory environment for insurance companies in India is primarily directed by the IRDAI and defined by the Insurance Act of 1938, as revised in 2015. After summarizing the current state of the legislation and regulatory guidance, this section turns to key issues in today's regulatory environment: recent government initiatives, solvency regulation, reporting and disclosure requirements, and other regulatory changes. Many of these issues related to the timeline of key regulations and changes affecting the insurance industry in India presented in Table 15. We close this section with a review of practitioners' opinions about the regulatory environment.

### 5.1 PRIMARY LEGISLATION AND IRDAI REGULATION

Prior to the establishment of IRDAI in 2000, the Insurance Act of 1938 did not stipulate any specific solvency regulations. However, the Act required that assets be higher than liabilities. The regulatory regime introduced in India by IRDAI from 2000 was aimed at promoting competition to enhance customer satisfaction through increased consumer choices and lower premiums. IRDAI wanted to protect the policyholder and ensure financial security of the insurance market.

At the level of primary legislation, revisions to the Insurance Act of 1938 were enacted in 2015 to transfer powers from the government of India to IRDAI, including power to issue a wider range of regulations in the areas of solvency, investments, expenses and commissions (subject to scrutiny by the relevant parliamentary committee). Powers were also given to intervene, where necessary, in individual companies without recourse to the government. This led to a new crop of regulations, some substantive and many that updated existing requirements. It also formalized previous arrangements under which IRDAI expects insurers to maintain a minimum solvency margin of 150%. It is now empowered to specify and enforce a particular "control level of solvency,"<sup>113</sup> which it has done (at 150%) in separate life and non-life 2016 regulations. According to IRDAI, this power can be used to set individual minimum solvency requirements by the company, though it does not exercise this at present.

To protect long-term interests of policyholders, IRDAI has outlined appropriate governance practices applicable to insurance companies for the maintenance of solvency, sound long-term investment policy and assumption of underwriting risks on a prudential basis from time to time. The regulator has issued comprehensive guidelines for adoption by insurance companies on the governance responsibilities of the board in the management of the insurance functions. These guidelines are in addition to the provisions of the Companies Act of 1956, Insurance Act of 1938 and other applicable laws.<sup>114</sup>

The IRDAI issued Corporate Governance Guidelines in 2016 and revisions to them in March 2020. The revised guidelines require insurers to have in place requisite control functions. The oversight of these functions is vested with the boards of the respective insurers. Guidelines lays down the structure, responsibilities and functions of the companies' boards of directors and senior management. Insurers are required to adopt sound and prudent principles and practices of governance, and they should have the ability to quickly address issues of noncompliance or weak oversight and controls.

The guidelines mandate insurers to constitute various committees, including audit, investment, risk management, policyholder protection, asset-liability management, and enterprise risk management (ERM) committees. These committees play a critical role in strengthening the company's control environment.

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<sup>113</sup> Section 64 VA.

<sup>114</sup> "Organizational Structure of IRDAI," Department of Financial Services, <https://financialservices.gov.in/insurance-divisions/Insurance-Regulatory-&-Development-Authority> (accessed on June 30, 2022)

The current approach to capital requirements makes India an outlier in Asia and internationally. Most countries in Asia have adopted a more risk-based approach to their capital requirements. For example, China and other countries have updated to a risk-based solvency regime.

The International Monetary Fund’s Financial Sector Assessment Program conducted an assessment of the Indian insurance sector’s regulation and supervision, in which one of the key recommendations is for the Indian insurance regulator to “formulate a strategy, plan, and timetable for modernization of the solvency framework as soon as possible.”<sup>115</sup>

**Table 15:**

**TIMELINE OF KEY REGULATIONS AND CHANGES AFFECTING THE INSURANCE INDUSTRY IN INDIA**

	Year	Key Regulatory Event	Key Change in Business Environment/Innovation
Pre-1956: Foundational years	1912	Indian Life Assurance Companies Act	The Indian government enacts the first statute to regulate the life business.
	1928	Indian Insurance Companies Act	The law enabled the government to collect statistical information on both life and non-life businesses transacted in India by Indian and foreign insurers, including provident insurance societies.
	1938	Insurance Act	The law was introduced with a view to protect the interest of the insured public, with comprehensive provisions for effective control over the activities of insurers.
	1950	The Insurance Amendment Act	The law abolished principal agencies. At the time, India had many insurance companies, which faced a high level of competition, and there were allegations of unfair trade practices.
1956–2000: Development	1956	Nationalization of the life insurance sector	Life Insurance Corporation was founded in the same year as the sector was nationalized. LIC absorbed 154 Indian insurers, 16 non-Indian insurers and 75 provident societies—a total of 245 Indian and foreign insurers.
	1957	Formation of the General Insurance Council	The council framed a code of conduct to ensure fair conduct and sound business practices.
	1968	Amendment of the Insurance Act	The amendment established regulation of investments and set minimum solvency margins.
	1972	The General Insurance Business (Nationalization) Act	The law nationalized the general insurance business, taking effect on January 1, 1973; 107 insurers were amalgamated and grouped into four companies.
	1993	Constitution of the Malhotra Committee	The committee’s objective was to complement the reforms initiated in the financial sector. It recommended that the private sector, including foreign companies, be permitted to enter the insurance industry by floating Indian companies, preferably as a joint venture with Indian partners.
	1999	Constitution of the IRDAI	The key objectives of the IRDAI include promotion of competition to enhance customer satisfaction through increased consumer choice and lower premiums while ensuring the financial security of the insurance market.

<sup>115</sup> “India: Financial Sector Assessment Program: Insurance Sector Regulation and Supervision-Technical Note,” International Monetary Fund, April 2, 2018, <https://www.imf.org/en/Publications/CR/Issues/2018/04/02/India-Financial-Sector-Assessment-Program-Insurance-Sector-Regulation-and-Supervision-45754> (accessed on June 30, 2022).

	Year	Key Regulatory Event	Key Change in Business Environment/Innovation
	2000	IRDAI (General- reinsurance) regulations	General Insurance Corporation of India converted into a national reinsurer.
2001–2010: Growth	2002	Protection of Interests of Policyholders' Regulations	The regulations, which run into 11 clauses, bring into practice certain rights to the policyholders and prospects. Among these are the period of look-in for life coverage, the establishment of a grievance redressal procedure, and the concept of payment of interest on delayed settlement of claims.
	2005	Micro Insurance Regulations	The regulations promote insurance coverage among the economically vulnerable sections of society.
	2009	Guidelines for Corporate Governance	The guidelines provide a relevant and appropriate corporate governance regime for Indian insurers.
2011–2015: Crash	2011	IRDAI (Issuance of Capital by Life Insurance Companies) Regulations	The regulations, which were formulated in consultation with the Securities and Exchange Board of India (SEBI), notified life insurance companies that they are allowed to raise capital from the capital market through public offerings.
	2015	Insurance Laws Amendment Act	The act granted the IRDAI greater flexibility to regulate insurance companies through its rule-making powers on matters such as management fees, commissions and composition of the insurance company's investment portfolio.
2016–present: Recovery	2016	IRDAI (Investment) Regulations	The regulations address the kinds and amounts of investments that insurance and reinsurance companies may make.
	2016	IRDAI (Health Insurance) Regulations	The regulations specify that several requirements and conditions must be incorporated into health insurance policies.
	2019	The Indian Insurance Companies (Foreign Investment) Amendment Rules	The rules increased the permissible limit of foreign direct investment in insurance intermediaries to 100%.
	2021	Insurance (Amendment) Act	The act increases the limit on foreign investment in an Indian insurance company from 49% to 74% and removes restrictions on ownership and control.

**Source:** “History of Insurance in India,” IRDAI, July 31, 2020, <https://www.irdai.gov.in/>; “IRDA Notifies the Issuance of Capital by Life Insurance Companies Regulations, 2011,” International Lawyers Network, December 9, 2011, <https://www.iltoday.com/>; “IRDAI Health Insurance Regulations 2016,” BankBazaar, <https://www.bankbazaar.com/health-insurance/irda-regulations-guidelines-medical-insurance.html>; Rajeev Kumar, “Insurance Rules Change 2019: No Cap to Foreign Equity Investment for Intermediaries,” *Financial Express*, November 6, 2019, <https://www.financialexpress.com/>; “Insurance Companies (Foreign Investment) Amendment Rules Enter into Force,” *Lexology*, June 29, 2021, <https://www.lexology.com/commentary>. The Crash and Recovery segments refer to information from Table 2.

## 5.2 RECENT GOVERNMENT INITIATIVES

The government of India has taken several initiatives to boost the insurance industry. Table 16 summarizes a few key highlights.

The General Insurance Business Amendment Act of 2021, which allows privatization of state-run general insurance companies, was passed by the Parliament in August 2021 and came into force the same month. The amended legislation has removed the requirement that the central government should hold not less than 51% of equity capital in a specified insurer. It also provides for allowing greater private participation in public-sector insurance companies and enhancing insurance penetration and social protection, among other objectives.

The government, as a part of its divestment strategy, decided to go for the mega initial public offering (IPO) of LIC in May 2022. To facilitate the listing, the government made about 27 amendments to the LIC Act of 1956 during the

months leading up to the IPO. As per the amendments, the central government will hold at least a 75% stake in LIC for the first five years following the IPO and at least 51% at all times after five years of the listing.<sup>116</sup>

**Table 16:**

**GOVERNMENT OF INDIA INITIATIVES TO BOOST THE INSURANCE INDUSTRY**

Initiative	Objective	Details
Agreement with the World Bank	Improve health services in Meghalaya (in northeast India)	In November 2021, the Indian government signed an agreement with the World Bank for a USD 40 million project to advance the quality of health services in Meghalaya, including the state's health insurance program.
Passage of the General Insurance Business (Nationalization) Amendment Bill	Allow privatization of general insurance companies	In August 2021, the Parliament passed the General Insurance Business (Nationalization) Amendment Bill, which allows privatization of state-run general insurance companies.
FDI in insurance increased to 74% from 49%	Help local private insurers grow and expand their presence across India	The Union Budget for 2020–21 increased the FDI limit in insurance from 49% to 74% to address India's low insurance penetration (at 3.7% of the country's GDP, compared with the world average of 6.31%).
LIC IPO	Government to raise money through markets	As part of the consolidation in the banking and insurance sector, LIC debuted in the equity market in May 2022 and raised USD 2.7 billion from the market.
Infusion of money into public-sector general insurance companies	Improve financial health	In February 2021, the finance ministry announced infusion of INR 3,000 crore (approximately USD 391 million) into state-owned general insurance companies to improve their financial health.
Fund allocation for crop insurance	Protect safety of crops and ensure that the maximum benefit of crop insurance reaches farmers	A fund of INR 16,000 crore (USD 2 billion) was allocated for the crop insurance scheme in the Union Budget for 2020–21.

**Source:** "India and World Bank Sign Agreement to Strengthen Health Systems in Meghalaya," Ministry of Finance, November 1, 2021, <https://pib.gov.in/PressReleasePage.aspx?PRID=1768403>; "The General Insurance Business (Nationalization) Amendment Bill 2021," PRS Legislative Research, <https://prsindia.org/billtrack/>; "Finance Minister Notifies Rules for Increased FDI Limit in the Insurance Sector," *Mint*, May 21, 2021, <https://www.livemint.com/insurance>; "Finance Ministry to Infuse Rs 3,000 Crore in General Insurance Companies This Quarter," *New India Express*, February 14, 2021, <https://www.newindianexpress.com/>; "Government of India Allocates Rs. 16000 Crore for Pradhan Mantri Fasal Bima Yojana (PMFBY) for 2021–22," Ministry of Agriculture and Farmers Welfare, February 7, 2021, <https://pib.gov.in/PressReleasePage.aspx?PRID=1695990>.

In 2020, the Securities and Exchange Board of India (SEBI) issued a consultation paper on the proposed amendments in the regulations for listing obligations and disclosure requirements,<sup>117</sup> which address the applicability and role of the risk management committee (RMC). SEBI has, in the backdrop of COVID-19, felt the need for a more robust framework for businesses to manage the multitude of risks they face. The RMC is proposed to be expanded and

<sup>116</sup> "2022: A Likely Year of Firsts for Insurance; General Insurer Privatisation; LIC Mega IPO," *Business Today*, December 30, 2021, <https://www.businesstoday.in/industry/banks/story/2022-a-likely-year-of-firsts-for-insurance-general-insurer-privatisation-lic-mega-ipo-317384-2021-12-30> (accessed on June 30, 2022).

<sup>117</sup> *Applicability and Role of the Risk Management Committee: Amendments to the Securities and Exchange Board of India (Listing Obligations and Disclosure Requirements) Regulations, 2015*, SEBI, [https://www.sebi.gov.in/sebi\\_data/meetingfiles/apr-2021/1619067211138\\_1.pdf](https://www.sebi.gov.in/sebi_data/meetingfiles/apr-2021/1619067211138_1.pdf) (accessed on June 30, 2022).

made applicable to the top 1,000 listed entities based on market capitalization, an increase from the earlier top 500. The roles and responsibilities of the RMC are as follows:

- Formulating a detailed risk management policy, including the framework for identification of risks with a special focus on financial, operational, sectoral, ESG and cyber risks; measures for risk mitigation; systems of internal control and business contingency plans
- Monitoring and overseeing the implementation of the policy
- Ensuring systems and processes are in place to monitor and evaluate risks
- Reviewing the policy annually, considering the changing dynamics
- Keeping the board informed about the nature and content of discussions, recommendations and actions to be taken
- Appointing, removing and fixing the remuneration of the chief risk officer, if any, subject to joint review with the Nomination and Remuneration Committee

### 5.3 SOLVENCY REGULATION

As prescribed by the IRDAI, the required solvency margin (RSM) is the amount by which an insurance company's capital exceeds its projected liabilities—effectively a measure of the company's financial health. In India, every life insurer is required to maintain an RSM, per Section 64VA of the Insurance Act since 1938. Furthermore, the IRDAI (Assets, Liabilities and Solvency Margin of Insurers) Regulations of 2000 describe in detail the method for computing the RSM. In the case of life insurers, the RSM is the higher of an amount of INR 50 crore (about USD 6.52 million)—or INR 100 crore (about USD 13 million) in the case of reinsurers—or a sum based on a formula given in the regulations.<sup>118</sup> General and life insurers are required to comply with the stipulated solvency ratio of 1.50.

IRDAI has set a working solvency margin ratio (ratio of actual solvency margin to the required solvency margin) of 1.5 for all insurers. If an insurer does not meet this requirement, the authority is to direct the insurer to submit a financial plan indicating a plan of action to correct the deficiency within a specified period not exceeding six months.

During FY 2008, IRDAI introduced the quarterly reporting of solvency status for all the insurers. Accordingly, all the insurers are required to file their solvency status on June 30, September 30, December 31 and March 31.<sup>119</sup>

The concept of risk-based capital (RBC) originated in the U.S. banking industry in the early 1960s.<sup>120</sup> In 2017, an IRDAI committee report recommended the implementation of the RBC approach and market-consistent valuation of liabilities.<sup>158</sup> IRDAI chairperson S. C. Khuntia said in September 2020 that the regulator was planning to introduce a new risk-based solvency system and strengthen risk management rules in order to ensure that insurance firms are equipped with better capital adequacy to deal with socioeconomic shocks such as the COVID-19 pandemic. Khuntia expected the system to be implemented along with Ind AS 17 in 2023. The 2020 committee also suggested reducing the entry-level capital requirement for floating a stand-alone micro insurance company to INR 20 crore (about USD

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<sup>118</sup> "How Safe, Investing in Insurance Companies," Life Insurance Council, <https://www.lifeinscouncil.org/consumers/InvestingInInsuranceCompanies> (accessed on June 30, 2022).

<sup>119</sup> "Reporting of Maintenance of Solvency Ratio—Quarterly Basis," *IRDA Journal*, February 23, 2007, <https://www.irdai.gov.in/> (accessed on June 30, 2022).

<sup>120</sup> For instance, responding to the 1990 report *Failed Promises* (by Representative John Dingell, chair of the U.S. House Energy and Commerce Subcommittee), which criticized insurance regulations in the U.S., the National Association of Insurance Commissioners (NAIC) formally adopted the RBC framework in December 1993. However, RBC has been modernized with principal-based reserves (PBR) in the U.S., effective January 2017.

2.61 million) from the current requirement of INR 100 crore (about USD 13 million), to help accelerate the expansion of the micro insurance market.<sup>121</sup>

For example, to enforce the solvency levels in 2019, IRDAI has acted against Reliance Health Insurance Company Limited for not maintaining solvency margin. The insurer was asked to restore the level of solvency within one month, but it did not comply. IRDAI mandates that insurers must always maintain 150% solvency. Reliance Health's solvency stood at 106% till the end of June. It slipped to 77% by the end of August and further deteriorated to 63% by the end of September. Reliance was issued a show cause notice and given another opportunity to present its case. The IRDAI issued directions to Reliance Health, and the latter executed by stopping sale of new policies and transferring the entire policyholders' liabilities along with financial assets to Reliance General Insurance (promoters' other insurance firm).<sup>122</sup>

#### 5.4 REPORTING AND DISCLOSURE: INDIAN ACCOUNTING STANDARDS (IND AS) 117

Many countries around the globe are either adopting the International Financial Reporting Standards (IFRS) 17 issued by the International Accounting Standards Board (IASB) or developing their own standards similar to IFRS 17. This is expected to bring comparability and uniformity across the accounting practices. India also decided to converge their accounting standards to IFRS 17, and accordingly, the regulator announced new accounting standards, known as the Indian Accounting Standards (Ind AS) 17 for the insurance industry. The new standards bring about changes in many key areas of reporting, such as revenue recognition, valuation of financial instruments, lease accounting, business combinations, deferred taxes and treatment of joint ventures.

Ind AS is based on the IFRS, which the IASB'S International Financial Reporting Interpretations Committee revises from time to time. To ensure convergence with IFRS, the Institute of Chartered Accountants of India (ICAI)<sup>123</sup> issues revisions of the Ind AS corresponding to changes in the IFRS.<sup>124</sup> Keeping in mind the objective of enhanced transparency in financial statements prepared by insurers in India, the ICAI in March 2018 issued its first exposure draft on Ind AS 117: Insurance Contracts, which is consistent with IFRS 17. ICAI has invited comments on the exposure draft up to March 2022 and will release the final draft later this year. This is expected to be implemented by insurers in India in 2023, following the global release of revisions to IFRS 17 in January of that year.

While Ind AS 117 mirrors the core aspects of the IFRS 17, there are some differences. For example, unlike IFRS 17, Ind AS 117 does not prescribe methods for determining risk adjustment for nonfinancial risk, and it is not explicit on the definition of what constitutes facts and circumstances and how the onerous testing should be performed.

According to a circular issued by IRDAI in January 2020, while the insurance sector was preparing to implement Ind AS, it was noted that the IASB had taken a considered view to amend IFRS 17 "Insurance Contracts," due to the concerns raised by various stakeholders around accounting treatments, operational complexity and implementation

<sup>121</sup> "IRDAI Panel Suggests Reducing Entry-Level Capital Requirement for Micro-Insurance Companies," *Economic Times*, October 11, 2020, <https://economictimes.indiatimes.com/industry/banking/finance/insure/irdai-panel-suggests-reducing-entry-level-capital-requirement-for-micro-insurance-companies/articleshow/78600656.cms?from=mdr> (accessed on June 30, 2022).

<sup>122</sup> Deepak P. Singh, "Solvency Margin & Insurance Companies," *Taxguru*, December 12, 2020, <https://taxguru.in/corporate-law/solvency-margin-insurance-companies.html> (accessed on June 30, 2022).

<sup>123</sup> The ICAI is a statutory body established by an Act of Parliament—the Chartered Accountants Act of 1949 (Act No. XXXVIII of 1949)—for regulating the profession of chartered accountancy in the country. The institute functions under the administrative control of the Ministry of Corporate Affairs, Government of India. The ICAI is the second largest professional body of chartered accountants in the world, with a strong tradition of service to the Indian economy in public interest.

<sup>124</sup> *Initial Application of Ind AS 117 and Ind AS 109—Comparative Information*, exposure draft, ICAI, January 2022, <https://resource.cdn.icai.org/69183asb55295.pdf> (accessed on June 30, 2022).

challenges. The IASB made the final amendments in mid-2020. In the Indian context, the Ministry of Corporate Affairs has yet to issue the equivalent standard of IFRS 17. Subsequently, IRDAI would be able to issue regulations on preparation of Ind AS-compliant financial statements. The authority, in its meeting on December 20, 2019, decided to implement Ind AS 109 and the Ind AS equivalent of IFRS 17 simultaneously, along with all other applicable Indian Accounting Standards.<sup>125</sup>

The structure of Ind AS 117 is depicted in Figure 5. The measurement model defined by Ind AS 117, which is equivalent to IFRS 17, outlines a thorough and coherent framework that provides information regarding different features of insurance contracts and the way in which the issuers of these contracts earn income from them. The standard prescribes three measurement approaches for insurance contracts:<sup>126</sup>

1. **General (or building block) model.** The general model is a default model based on the following building blocks: fulfillment cash flows, comprising estimates of future cash flows, adjusted to reflect the time value of money and risk adjustment for nonfinancial risks, and contractual service margin (CSM), representing unearned profit from the contract. Additionally, if the net cash flows result in no CSM, loss is recognized immediately.
2. **Premium allocation model (PAA).** The PAA is an optional simplified model for insurance contracts, which is applicable for contracts wherein the measurement of liability under PAA will not differ materially from the measurement under general model or else for contracts with a coverage period of one year. Many non-life insurance products would fall in this category.
3. **Variable fee model (VFM).** The VFM would be applicable to direct participating insurance contracts.<sup>127</sup> The change in fulfillment cash flows arising from time value of money and financial risks is considered part of the variable fee for future services and recognized through CSM.

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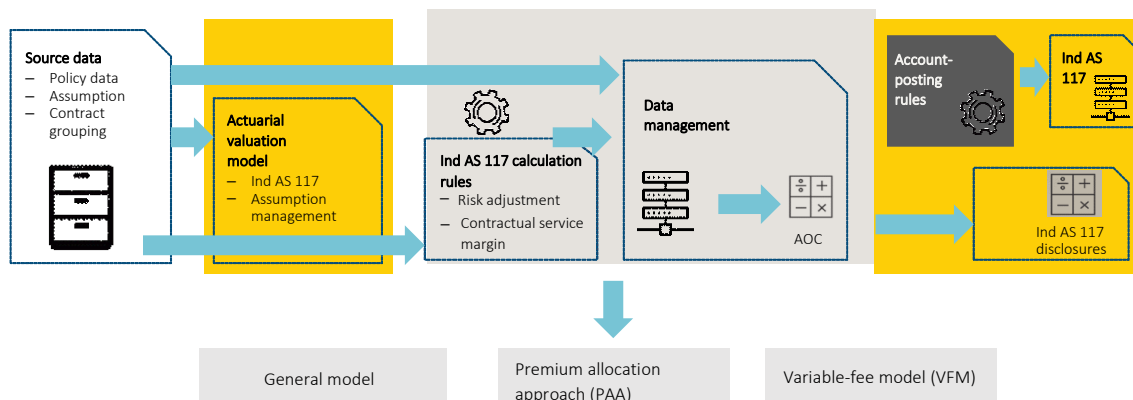
<sup>125</sup> *Circular on Implementation of Ind AS in the Insurance Sector*, IRDA, January 21, 2020, [https://www.irdai.gov.in/ADMINCMS/cms/whatsNew\\_Layout.aspx?page=PageNo4016&flag=1](https://www.irdai.gov.in/ADMINCMS/cms/whatsNew_Layout.aspx?page=PageNo4016&flag=1) (accessed on June 30, 2022).

<sup>126</sup> *Indian Accounting Standard (Ind AS) 117, Insurance Contracts*, exposure draft, Institute of Chartered Accountants, March 2018, <https://www.puneicai.org/images/pdf/Exposure-Draft-of-Indian-Accounting-Standard-Ind-AS-117-Insurance-Contracts1.pdf> (accessed on June 30, 2022).

<sup>127</sup> An insurance contract is a contract under which one party (the issuer) accepts significant insurance risk from another party (the policyholder) by agreeing to compensate the policyholder if a specified uncertain future event (the insured event) adversely affects the policyholder.



Figure 6:  
STRUCTURE OF IND AS 117



<sup>3</sup>AOC: Analysis of change

Source: *Ind AS 117 Insurance Contracts*, KPMG, June 2018, <https://assets.kpmg/content/dam/kpmg/in/pdf/2018/06/ind-as-117-insurance-contracts.pdf>; "Exposure Draft of Amendments to Ind AS 117, Insurance Contracts, for Comments," ICAI, December 2020, <https://www.icaai.org/post/ed-amendments-to-indas-117-insurance-contracts>.

The key highlights of exposure draft Ind AS 117 are as follows:<sup>128</sup>

1. Separate presentation of underwriting and finance results will provide added transparency about the sources of profits and quality of earnings.
2. Premium volumes will no longer drive the top line, as investment components and cash received are no longer considered revenue.
3. Accounting for options and guarantees will be more consistent and transparent.
4. Written premiums and net margin calculations will be based on current revenue, and cost accounting practices will be replaced by the following procedure:
  - a. The fulfillment cash flows, comprising estimates of future cash flows, represent an adjustment to reflect the time value of money and the financial risks related to future cash flows.
  - b. Risk is adjusted for nonfinancial risk.
  - c. Contractual service margin (CSM) is calculated based on actuarial models, risk adjustments and analysis of movements, giving possibly new insights in key performance drivers not previously disclosed. This may also have an impact on the way products are currently being priced.

While implementing Ind AS 117, the insurance industry could face some key challenges:

- **Method.** The new measurement models and grouping requirement will necessitate significant changes to the system, data warehouses and valuation methodology, to support the measurement of insurance liabilities in the future.

<sup>128</sup> *Ind AS 117 Insurance Contracts: What It Means to Indian Insurers*, KPMG, June 2018, <https://assets.kpmg/content/dam/kpmg/in/pdf/2018/06/ind-as-117-insurance-contracts.pdf> (accessed on June 30, 2022).

- **Measurement.** Actuarial computations will be more complex as the standards require greater granularity in contract groupings for valuation. The solvency margins also could be affected. To determine the discount rate in illiquid markets—such as in India, whose market is less mature—the entity needs to determine an appropriate method to adjust the observable market information in a way that reflects the difference in liquidity characteristics of insurance contracts compared with those of the observable instrument.
- **Recognition.** For Ind AS117, challenges would include identification of the specific metrics to be used to test onerous contracts and the systems to be used for testing.
- **Presentation and disclosure.** Disclosing the entity’s expectation with respect to CSM recognition in future periods and providing details regarding the expected future profitability pattern would be additional challenges for insurers.

## 5.5 OTHER RELEVANT REGULATORY CHANGES

Other regulatory changes are significant for India’s insurance companies. These include the regulation of microinsurance, the possible regulation of artificial intelligence and machine learning, and government’s general regulatory approach to innovation.

### 5.5.1 MICROINSURANCE REGULATION

The IRDAI has created a special category of insurance policies called microinsurance policies to promote insurance coverage among the economically vulnerable sections of society. The IRDAI (Micro-insurance) Regulations issued in 2005 define and enable microinsurance. The regulations envisage the protection of poor people against debt traps that can adversely affect their livelihoods and even their lives. Unlike generic products, microinsurance helps bring down the cost for consumers by putting in innovative constraints on coverage, time or usage.

The IRDAI Micro Insurance Regulations of 2015 (revised regulations from 2005) define microinsurance as a life insurance policy with a maximum assured amount of INR 2 lakh (about USD 2,610) or less. The coverage amounts range from INR 5,000 (about USD 65) to INR 10,000 (about USD 130) for a small period. These policies provide a fully guaranteed or variable insurance benefit and have a simplified and less complex product design.

The introduction of microinsurance has four main objectives: (1) providing insurance to low-income households; (2) ensuring affordable and accessible insurance; (3) protecting against financial liabilities; and (4) containing the adverse effects of poverty.

### 5.5.2 AI/ML

Recent policy documents and working drafts on artificial intelligence issued by the NITI Aayog (the Indian government’s Planning Commission) recognize ethical and fundamental concerns related to implementation of AI and hint that a self-regulatory approach to address these concerns is coming.<sup>129</sup> While there is no comprehensive and stand-alone data privacy regulation in India, the right to privacy was declared a fundamental right by India’s Supreme Court on August 24, 2017. The government formed a data protection committee and released the draft Personal Data Protection Bill in 2018. Final judgment on adoption of this bill is still awaited.

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<sup>129</sup> *Towards Responsible AI Enforcement*, NITI Aayog, November 2020, [https://www.niti.gov.in/sites/default/files/2020-11/Towards\\_Responsible\\_AIforAll\\_Part1.pdf](https://www.niti.gov.in/sites/default/files/2020-11/Towards_Responsible_AIforAll_Part1.pdf) (accessed on June 30, 2022).

As some prominent advisory councils and centers are steering the “ethics for AI” debate at a central level,<sup>130</sup> India has also set the stage for similar initiatives. Although the government has not issued any regulatory framework for AI, a few guiding documents recently issued by the NITI Aayog hint at the approach to ethics in AI and related regulations and lay out a regulatory road map for the future. These guiding documents include *The National Strategy for Artificial Intelligence: #AiForAll* (issued in June 2018) and *Working Document: Towards Responsible #AiForAll*, Part I, issued in November 2020.

The NITI Aayog policy documents state that existing laws are sufficient to tackle the challenges of AI that directly affect society. Current laws are described in the documents as system considerations, and the existing laws require sector-specific modifications and alignments. The policy documents also identify a different category of challenges that indirectly affect society, such as loss of jobs, deep fakes, psychological profiling and malicious use. For challenges having an indirect impact, such as loss of jobs, the documents suggest skilling, adapting legislations and regulations to harness new job opportunities. Policy documentation suggests seven broad principles as part of self-regulation: safety and reliability, equality, inclusivity and nondiscrimination, privacy and security, transparency, accountability, and protection and reinforcement of positive human values.

Further insight can come from comparing the guidance in the NITI Aayog policy documents with work being done outside of India. Table 17 summarizes key AI principles that have been proposed in China, North America, and Europe, showing how these do—and do not—overlap with the guidance in India.

**Table 17:**  
**AI PRINCIPLES IN FOUR REGIONS**

India (NITI Aayog). General Guidance	Europe (EIOPA). Specific to Insurers	China (MOST). General Guidance	US (NAIC) and Canada. Specific to Insurers
Protection and reinforcement of positive human values	Fairness and non-discrimination	Harmony and friendliness	Fair and ethical
Equality, inclusivity, and non-discrimination		Fairness and justice	
Transparency, privacy, and security	Transparency and explainability	Respect of privacy	Transparent
Safety and reliability	Human oversight	Security and safety	Accountable and compliant
Accountability		Shared responsibility	
Safety and reliability	Robustness and performance	Agile governance	Secure, safe, and robust
	Data governance of record-keeping		
	Proportionality		
		Inclusivity and sharing	Equality, inclusivity, and non-discrimination

**Source:** *National Strategy for AI*, discussion paper, NITI Aayog, June 2018, <https://indiaai.gov.in/documents/>; *Responsible AI*, NITI Aayog, February 2021, <https://www.niti.gov.in/sites/>; *National Association of Insurance Commissioners (NAIC) Principles on Artificial Intelligence (AI)*, NAIC, August 2020, <https://content.naic.org/>; “EIOPA Publishes Report on Artificial Intelligence Governance Principles,” European Insurance and Occupational Pensions Authority (EIOPA), June 17, 2021, <https://www.eiopa.europa.eu/>;

<sup>130</sup> The U.K. has formulated a Centre for Data Ethics and Innovation, under the Department for Digital, Culture, Media and Sport, and Singapore has formulated an Advisory Council on Ethical Use of AI and Data, under its Infocomm Media Development Authority (IMDA).

A new generation of artificial intelligence ethics code”, Ministry of Science and Technology of the Peoples Republic of China, September 26, 2021, [https://www.most.gov.cn/kjbgz/202109/t20210926\\_177063.html](https://www.most.gov.cn/kjbgz/202109/t20210926_177063.html)

### 5.5.3 INNOVATION AND REGULATORY MODERATION

The government and regulator (IRDAI) have increased rules and regulations as a response to fast-moving trends and innovations in the insurance market. New products and platforms have emerged over the past few years with the use of advanced tools such as AI/ML, and these products and platforms distribute tailored products to targeted customers. Nevertheless, offering new products and technologies could also expose policyholders and insurers themselves to fraud, operational and other risks. Thus, insurers must be monitored and supervised for risk on an ongoing basis.

The Indian government and regulator have been promoting growth while safeguarding policyholders’ interests. This is evident in multiple penalties imposed on offenders in the preceding years. For example, in FY 2020, authorities levied penalties totaling around USD 0.95 million,<sup>131</sup> compared with USD 0.014 million in FY 2019.<sup>132</sup> IRDAI has even officially named entities for rule violations in their annual report. India has issued regulations governing aspects of failure to disclose fraudulent activities, review the actions of intermediaries used for distribution of products, providing incorrect information on system rectification, soliciting business through unlicensed parties, and brokers carrying out business other than insurance brokerage and risk management.

From the insurance companies’ perspective, the potential penalties due to operational risk events have significantly increased. In 2021, IRDAI imposed penalties on four insurers for violating norms related to motor insurance.<sup>133</sup> The insurers were found guilty of not fulfilling medical transportation program obligations<sup>134</sup> and of violating guidelines for motor insurance service providers.<sup>135</sup>

## 5.6 PRACTITIONERS’ OPINIONS ABOUT THE INSURANCE REGULATORY ENVIRONMENT

The insurance industry in India has been growing dynamically, with total insurance premium increasing rapidly. The low penetration and density rates reveal the uninsured nature of a large section of India’s population and the presence of an insurance gap. Although India’s insurance penetration and density are low compared with advanced countries in both the life and non-life insurance sectors, they have been showing a slow but steady growth trend in recent years. The trend has been shaped largely by the nationalization of life and non-life sectors, the constitution of IRDAI, the sector opening up for both private and foreign players, and the increase in the foreign investment cap to 74%.

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<sup>131</sup> IRDAI Annual Report 2019–20, IRDAI, <https://www.irdai.gov.in/> (accessed on June 30, 2022).

<sup>132</sup> Ibid

<sup>133</sup> “IRDAI Imposes Rs 51 Lakh Penalty on 4 Insurers,” *Economic Times*, April 18, 2021, <https://economictimes.indiatimes.com/industry/banking/finance/insure/irdai-imposes-rs-51-lakh-penalty-on-4-insurers/articleshow/82129042.cms?from=mdr> (accessed on June 30, 2022).

<sup>134</sup> MTP is medical transportation program that arranges non-emergency medical transportation services for clients who are unable to get to their covered health care appointments. The failure to meet MTP obligation means not considering MTP as a function of “number of vehicles insured/uninsured,” as stated in the recent guidelines, instead using premium derived from motor third-party insurance businesses. The previous formula was unable to capture the penetration (percentage of insured vehicles to total vehicles on the road).

<sup>135</sup> “IRDAI Panel for Separate Payments of Vehicle Insurance Premium,” *Hindu Business Line*, January 24, 2021, <https://www.thehindubusinessline.com/money-and-banking/irdai-panel-for-separate-payments-of-vehicle-insurance-premium/article33649053.ece> (accessed on June 30, 2022).

Some practitioners applauded how regulators hold discussion panels with insurers around potential regulations and seek feedback from participating entities to understand their readiness and key challenges faced. These types of regulatory approaches help them deal with regulatory initiatives more effectively.

While Indian regulations are changing rapidly, regulators seek the opinions of insurance companies by first issuing the proposed regulation in the form of circulars, exposure drafts, and so on. Thereafter, discussion panels are held. This is the regulation-drafting process that practitioners participate in actively and appreciate. Practitioners are typically encouraged to participate in the legislative process and have complimented the regulator for the entire process conducted, considering this to be the best practice. Risk functions in the business structure closely monitor regulatory developments and participate actively. The approach is described in Table 18.

**Table 18:**  
**REGULATORS' APPROACH TO KEEPING UP WITH INSURERS**

Issuance of Circular	Discussion Panels	Feedback and Assessment
The regulator issues exposure drafts and circulars proposing the regulations and guidance. The regulatory authority disseminates drafts and circulars so practitioners can provide suggestions and/or comments.	Practitioners are invited to discussion panels and roundtables with the regulatory authority. Discussions are held to understand insurers' readiness, benefits of regulatory changes, and challenges in the implementation of the regulation once released.	Feedback and suggestions are consolidated and analyzed. Risks and impacts are measured to understand the strategic impact. Practitioners are encouraged to create live test environments such as the sandbox to assess changes within the model life cycle and the impact of regulatory changes.

Source: Interviews with practitioners.

Practitioners mentioned that the start of 2020 saw the IRDAI issuing norms for standard individual health care insurance products. Due to the COVID-19 pandemic, the regulator advised insurers to design appropriate health insurance products to protect themselves from the pandemic. For example, on the life insurance front, the IRDAI on October 15, 2020, issued guidelines on a standard individual term life insurance product called Saral Jeevan Bima. Under this, life insurers permitted to transact new business were required to offer the standard product with effect from January 1, 2021. This was an attempt by the IRDAI to make insurance available and affordable for all.

Practitioners also discussed that the regulator is looking at ways to identify the price adequacy of products, because many insurers, in attempts to gain market share, sell insurance policies at the cheapest price by cutting benefits from the policies. This practice is being followed by several insurers because many customers do not perform due diligence on insurance products before buying them; they just go with the cheapest product in a particular segment. No regulations establish minimum prices for a policy or product as of now, and many insurers are taking advantage of this.

### 5.6.1 ROLLOUT OF IND AS 117

As discussed in subsection 5.3, risk-based capital and Ind AS 117 are expected to be rolled out together. Insurance practitioners told us that implementation of both would enable the following:

- Evaluation of solvency while considering the inherent risks of a company
- Increased focus on transparency by insurers
- Greater focus on and evaluation of risks pertains to insurance company, leading to better policyholder protection
- More risk-sensitive design, which reveals a company's true financial position

- Consistency with international insurance capital standards, enabling comparison with insurance companies around the world

The adoption of Ind AS 117 is expected to have a significant impact on the fundamental aspects of the insurance business and its financial management. Table 19 summarizes practitioners' views of the challenges they expect to face in implementation Ind AS 117.

**Table 19:**

**KEY CHALLENGES FACED BY INSURANCE FIRMS IN IMPLEMENTATION OF IND AS 117**

Type	Requirement	Challenges
Data	Estimate the fulfillment cash flows that relate directly to the fulfillment of the group of insurance contracts. This needs to include all cash inflows and outflows (including pre-recognition cash flows).	<ul style="list-style-type: none"> <li>• Difficulty in establishing pre-inception cash flows, especially indirect sales channels</li> <li>• Complexity of estimation at policy/contract level</li> <li>• Significantly different timing of accrual and actual cash flows</li> </ul>
	Establish the attributable expense assumptions based on the current expense policy, and assess the corresponding impact on the fulfillment cash flows.	<ul style="list-style-type: none"> <li>• Expenses not recorded at a level that can be easily bifurcated</li> <li>• Expenses not recorded to the right cost centers; cost centers not clearly defined</li> </ul>
Systems	Flag policies/contracts with onerous status, mark up cohorts to link with contracts, and update product hierarchy.	<ul style="list-style-type: none"> <li>• Need to figure out how to construct cohorts and append policies to them, as well as how in-period new business will be captured and aligned with locked-in rates</li> </ul>
	Use new nominal codes in charts of accounts to account for CSM accretion/run-off, amortization, adjustments and derecognition	<ul style="list-style-type: none"> <li>• Need to update and strategize accounting rules and methodology to generate journals for posting into ledgers</li> <li>• For group reporting, need to put efforts into deciding the process to generate multi-GAAP accounts<sup>a</sup></li> </ul>
Process	Should facts and circumstances indicate that a group of contracts may be onerous, an entity needs to assess whether the future fulfillment cash flows relating to remaining coverage (measured under the general model principles) exceed the carrying amount of the PAA liability for remaining coverage.	<ul style="list-style-type: none"> <li>• Difficulty in Identification of the specific metrics to be used to test onerous contracts</li> <li>• Systems to be used to perform testing</li> <li>• Source of the fulfillment cash flows (actuals) to be used to calculate the loss component</li> </ul>
Organization	Actuarial-driven solution	<ul style="list-style-type: none"> <li>• Considerable manual steps, entailing higher costs</li> <li>• Possibly a less efficient system setup</li> </ul>
	Finance-driven solution	<ul style="list-style-type: none"> <li>• Expensive to implement, and small firms are unlikely to opt</li> <li>• More time required to realize the benefits from migration</li> </ul>

<sup>a</sup>GAAP stands for generally accepted accounting principles.

**Source:** Interviews with practitioners; Saigeeta Bhargava and Rumeer Shah, "IFRS 17 Implementation: Practical Approaches and Challenges," 3rd webinar on IFRS 17, Institute of Actuaries of India, December 15, 2020, <http://www.actuariesindia.org/downloads/IFRS%2017%20challenges%20%20Saigeeta%20and%20Rumeer.pdf>

## 5.6.2 REGULATORY ENVIRONMENT AND SOME EMERGING ERM BEST PRACTICES

The frequent revision of corporate governance guidelines over the years has brought changes in the ERM function at insurance companies in India. The evolution of ERM in insurance is expected to quicken, with the sector likely to move soon to a risk-based approach from the present rule-based one. This would incentivize insurers to promote better risk management, as limited capitals and tighter solvency regulation have dampened insurers' risk mitigation actions.

Traditionally, roles of actuaries were restricted to pricing, valuation and regulatory reporting in (re)insurance companies and advisory roles in employee benefits. But today, they have entered other areas and industries, such as banking, environmental finance, data analytics and ERM. IRDAI regulations play a significant role in developing organizational risk management functions. One such is the IRDAI Appointed Actuary Regulation of 2000, which mandates every insurance firm to appoint an actuary to oversee the company's actuarial models and practices, solvency and compliance with insurance laws. Along with these regulations, other factors that have improved risk management education and boosted risk management practices in India are conferences and rewards from the IAI to young professionals (see section 2); surveys conducted to gauge risk management literacy among students, and ERM courses offered by the Institute of Risk Management.

Practitioners identified digital innovation and adoption of AI/ML solutions as key areas of impact, given their linkage with multiple insurance risks. In 2019, the IRDAI put in place a mechanism to boost digital innovation in the field and widen the reach of insurance in India. This mechanism allows companies to first test plans and services and then seek approval from the regulator. Regulations governing personal data protection would also have a positive impact on the core insurance business, particularly by providing an impetus to adopt ERM practices, warranting updates in policy, tools and processes.

From an accounting perspective, the adoption of new accounting standards in India could significantly change insurers' current ERM practice. The possible impact of Ind AS 117 on ERM are identified in Table 20.

**Table 20:**  
**IMPACT OF IND AS 117 ON ERM**

Area of Impact	What the Adoption of Ind AS 117 Brings to ERM
<b>Data and underlying systems</b>	<ul style="list-style-type: none"> <li>Flexibility and scalability of data management to perform complex calculations and data access from the insurance process, including actuarial, trading, claims administration and accounting systems</li> <li>Data technology infrastructure supports better ERM compliance and controls to ensure robust data quality, accessibility, storage and archiving for the integration of many platforms in an entity</li> </ul>
<b>Collaboration</b>	<ul style="list-style-type: none"> <li>Greater collaboration between accounting and actuarial functions, as expected cash flows are typically in the actuarial realm, whereas actual cash flows are in the accounting realm, and because any difference between expected cash flows and actual cash flows has a direct impact on profit and loss, as experience adjustments</li> <li>To avoid unnecessary profit and loss fluctuations, a need to align the expected cash flow data and the actual cash flow data, requiring integration and potential business transformation (i.e., affecting ERM policies, controls and procedures)</li> </ul>
<b>Disclosure</b>	<ul style="list-style-type: none"> <li>Possible commercial sensitivity associated with a separate disclosure of claims and expenses expected at the beginning of the reporting period (especially for new business, as it will be indicative of the entity's technical pricing structure)</li> <li>Requirement for integration of financial reporting teams, underwriters, and pricing and reserving actuaries</li> </ul>
<b>Models and assumptions</b>	<ul style="list-style-type: none"> <li>Improvement of internal controls around methodologies and models (e.g., building and integrating an advanced tool for a contractual service margin (CSM) calculation engine, which can accelerate business transformation, particularly around automation, system integration and better work flows at the center of the organization)</li> <li>Need for insurers to adopt better and consistent assumptions, practices and approval process for complex accounting calculations, risk-adjusted cash flows, contracts issuance, and more, to provide for a robust ERM function</li> </ul>

Sources: Interviews with practitioners.

## Section 6: Conclusions

The Indian insurance market has grown from two insurers in 2000 to nearly 60 as of March 31, 2021. It has a lot of potential to grow and expand by improving the penetration of insurance products in line with the global average. India's low penetration and density rates uncover not only the opportunity but also the uninsured segment of the population and today's gap. This is an opportunity for insurance players to grab market share and tap in profits.

The sector has undergone several changes over the years, such as the opening of the sector to both private and foreign players, a recent increase in the FDI limit to 74%, and consolidation of the market with the liberalization of the insurance sector. The ERM function is at its nascent stage in India and would prove to be an anchor in risk mitigation and insurance growth. Insurers are looking to make their ERM function more robust and multifunctional to enhance their risk oversight structure and systems.

Practitioners have brought to our attention the impact of the increasing number of mergers, acquisitions and consolidations on the market during the past two or three years. Domestic insurance players are struggling to sustain market share and are incapable of innovation due to lack of capital. The industry is gradually consolidating, and insurers that are unable to adapt either will be merged into bigger entities or will go out of business.

The industry is also witnessing technological transformation, dominated by a shift to digitized solutions, product differentiation, cybersecurity and integration of AI/ML, even as insurers continue to deal with external issues mentioned by practitioners during their interviews: supply chain bottlenecks, slack claim settlement cycles during the COVID-19 pandemic, complex terms, and coverage policies, to name a few. Insurance practitioners have applauded regulatory initiatives such as the regulatory sandbox and discussion panels hosted by the regulator to discuss changes. The sandbox and other government-promoted initiatives and schemes have pushed insurance products through sectors of the society that were barely tapped before.

Practitioners are revamping their internal processes to sail through the dynamic environment. The ERM function is not the solution to the challenges lying ahead, but it is instrumental in assessing and deploying risk mitigation strategies. Practitioners have also identified the transformation to digital and changing consumer behavior as trends propelled by the COVID-19 pandemic. Insurance firms have already started adopting technological solutions such as chatbots, telematics, customized products, predictive modeling, online underwriting and digital distribution channels.

The prevailing business environment and key insurance functions (e.g., actuarial and data scientists) urge companies to continue improving and inventing ways to enhance their competitiveness. Still, outsourcing and offshoring continue to be a controversial topic on foreign-owned insurers' agendas. This business model would accelerate the way domestic insurers innovate, not only because international talent gets attracted, but also because foreign insurance practices percolate to the domestic business. Practitioners are looking beyond their comfort zones, and companies are tackling operative issues creatively and through research in cutting-edge practices to fuel the business models that will be prevalent in the coming years.

Practitioners have displayed optimism regarding the opportunities available and are confident about market developments toward maturity in the future. They have also reiterated the importance of ERM in helping firms navigate multiple risks by interacting with their operations and value chain. Insurance practitioners have provided enriching insights into the evolution of India's insurance market with respect to innovation, the business environment and regulatory activity. They have also helped us understand government policies concerning domestic and foreign investments.



## Section 7: Acknowledgments

The researchers' deepest gratitude goes to those without whose efforts this project could not have come to fruition, including our project oversight group (POG) and others for their diligent work in overseeing questionnaire development, analyzing and discussing respondent answers, and reviewing and editing this report for accuracy and relevance.

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FSA: Fellow of the Society of Actuaries

MAAA: Member of the American Academy of Actuaries

## Section 8: Participating Practitioners

The authors' deepest gratitude goes to those without whose efforts this project could not have come to fruition, including the India practitioners who generously shared their wisdom, insights, advice, guidance and arm's-length review of this report prior to publication. Any opinions expressed may not reflect their opinions, nor those of their employers. Any errors are the authors' alone. The following India practitioners have agreed to disclose their names:

- Mr. Vipul Aggarwal
- Mr. Satyanandan Atyam
- Mr. Supriyo Chaki
- Mr. Shirish Dandekar
- Mr. Murshid Kuttihassan
- Mr. Mehul Shah
- Mr. Sunil Sharma

Other practitioners preferred to remain anonymous.

## Section 9: Methodology

This section includes details about the scope, objectives, and procedures of the ERM study.

### Geographical Scope and Research Objective

The full ERM series covers China, India and the U.S. and Canada. This report focuses only on India.

The objective of the study is to prepare a report with insights and actionable intelligence to help ERM professionals manage regulatory risks. It provides an overview of the ERM function in the insurance industry's innovation, business and regulatory environment.

### Information Sources

Information and data for this project were derived from recent ERM literature, insights and suggestions from members of our project oversight group (POG), insurance practitioners' findings (sourced during interviews), historical research and documentation from actuarial sources, and CRISIL's insights. The secondary source of information comprised regulations announced in the geography under study, news and articles, academic papers and white papers.

### Procedures

- **Sample.** With the POG's help, a list of 15 insurers was formed, including life, non-life, and reinsurers. Around 30 invitations were sent out directly to practitioners, and five interviews were conducted, covering eight practitioners.
- **Interview timeline.** Practitioners were interviewed from November 2021 to May 2022.
- **Reach.** Some practitioners were contacted directly via email and were invited to participate; others were introduced by the sponsors of the research project. Additionally, a microsite was set up on CRISIL's website to facilitate dissemination of project information.
- **Interview process.** A measuring instrument (guide) was prepared with a set of interview questions designed to gather ERM information from practitioners.
- **Interview duration.** Practitioners were invited for a face-to-face interview for 30–45 minutes.
- **Interview support.** During the interviews, at least one interviewer was based in the practitioner's location,<sup>137</sup> and an experienced ERM actuary deployed the measuring instrument.
- **Practitioners' views.** Practitioners had a preview of the report, so they could share their views.
- **Anonymity.** The responses were kept anonymous unless practitioners stated otherwise. The POG only had access to an anonymized version of practitioners' responses, which excluded any reference that could help identify the participant or company.
- **Practitioners' profile.** The practitioners contacted were chief risk officers, chief financial officers, chief technology officers, compliance officers, heads of ERM, data protection officers, chief data science or AI/ML officers, and appointed actuaries. All have extensive experience in the insurance and regulatory space.
- **Governance.** A periodic review was scheduled with the POG to seek guidance in shaping the research.

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<sup>137</sup> Particularly for China, as some interviews required translation from Mandarin.

## Section 10: Glossary of Abbreviations

This section includes definitions of key acronyms mentioned in the paper.

**Aadhaar:** A 12-digit individual identification number issued by the Unique Identification Authority of India on behalf of the government. The number serves as a proof of identity and address anywhere in India.

**CAGR:** Compound annual growth rate.

**CSM:** Contractual service margin, a component of the asset or liability for the group of insurance contracts; represents the unearned profit the entity will recognize as it provides services in the future.

**ESG:** Environmental, social, and governance criteria; a set of standards for a company's operations that socially conscious investors use to screen potential investments.

**GIC Re:** General Insurance Corporation of India Ltd., a government-owned general insurance company.

**Ind AS:** The accounting standard adopted by companies in India.

**IRDAI:** The Insurance Regulatory and Development Authority of India; a regulatory body under the authority of India's Ministry of Finance; tasked with regulating and licensing the insurance and reinsurance industries in the country.

**LIC:** Life Insurance Corporation of India; the only government-owned life insurance company in India.

**LODR:** Listing obligations and disclosure requirements; requirements of the SEBI (Listing Obligations and Disclosure Requirements) Regulations of 2015, which mandate an annual evaluation of the board's performance and that of its committees and individual directors.

**MeitY:** The Ministry of Electronics and Information Technology; an executive agency of the government that was carved out of the Ministry of Communications and Information Technology on July 19, 2016, as a stand-alone ministerial agency responsible for the country's IT policy and strategy and the development of the electronics industry.

**MoHFW:** The Ministry of Health and Family Welfare; an Indian government ministry overseeing health policy in India; also responsible for all government programs related to family planning in India.

**POG:** Project oversight group; a team of volunteers who diligently work in overseeing questionnaire development, analyzing and discussing respondent answers, and reviewing and editing a report for accuracy and relevance.

**SEBI:** Securities and Exchange Board of India.

**SEZ:** Special economic zone; an area in which the business and trade laws differ from those in the rest of the country; established as part of the strategy to increase exports, generate employment and attract investments.

**VAC:** Virtual Actuarial Conclave; an annual flagship event hosted by the Institute of Actuaries of India.

## About the Canadian Institute of Actuaries (CIA)

The CIA is the qualifying and governing body of actuarial profession in Canada. It develops and upholds rigorous standards, shares risk-management expertise, and works toward advancing actuarial science for the financial well-being of society. The body has more than 6,000 members, who apply their knowledge of math, statistics, data analytics, and business in providing services and advice of the highest quality to help ensure the financial security of all Canadians.

The CIA Board has 15 actuaries, six councils focused on the core needs of the profession, and over 40 committees and numerous task forces working on issues linked to the CIA's strategic plan.

The CIA:

- Promotes the advancement of actuarial science through research
- Provides for the education and qualification of members and prospective members
- Ensures that the actuarial services provided by its members meet extremely high professional standards
- Is self-regulating and enforces rules of professional conduct
- Is an advocate for the profession with governments and the public in the development of public policies

The CIA and its members are active in the international actuarial community. The CIA is a founding member of the International Actuarial Association and was involved in the 1998 restructuring of the body.

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## About the Casualty Actuarial Society (CAS)

The CAS is a leading international organization for credentialing and professional education. Founded in 1914, the CAS is the world's only actuarial organization focused exclusively on property and casualty risks and has over 9,100 members worldwide. CAS members are experts in property and casualty insurance, reinsurance, finance, risk management, and ERM. Professionals educated by the CAS empower businesses and governments to make well-informed strategic, financial, and operational decisions.

The objectives of the CAS are:

- To advance the body of knowledge of actuarial science applied to general insurance, including property, casualty, and similar risk exposures
- To expand the application of actuarial science to enterprise and systemic risks
- To establish and maintain standards of qualification for membership
- To promote and maintain high standards of conduct and competence
- To increase the awareness of actuarial science
- To contribute to the well-being of society as a whole

In principle and in practice, the CAS values and seeks diverse participation within the property/casualty actuarial profession. In support of those values, the CAS encourages an inclusive community where differences are celebrated and all have the opportunity to participate to their fullest potential in its success.

Actuaries are required to adhere to high standards of conduct, practice, and qualifications of the actuarial profession, thereby supporting the actuarial profession in fulfilling its responsibility to the public.

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## About the Society of Actuaries Research Institute

Serving as the research arm of the Society of Actuaries (SOA), the SOA Research Institute provides objective, data-driven research, bringing together tried-and-true practices and future-focused approaches to address societal challenges and business needs. The institute provides trusted knowledge, extensive experience, and new technologies to help effectively identify, predict, and manage risks.

Representing the thousands of actuaries who help conduct critical research, the SOA Research Institute provides clarity and solutions on risks and societal challenges. The institute connects actuaries, academics, employers, the insurance industry, regulators, research partners, foundations and research institutions, sponsors, and non-governmental organizations, building an effective network that provides support, knowledge, and expertise regarding the management of risk to benefit the industry and the public.

Managed by experienced actuaries and research experts from a broad range of industries, the SOA Research Institute creates, funds, develops, and distributes research to elevate actuaries as leaders in measuring and managing risk. These efforts include studies, essay collections, webcasts, research papers, survey reports, and original research on topics impacting society.

Harnessing its peer-reviewed research, leading-edge technologies, new data tools, and innovative practices, the institute seeks to understand the underlying causes of risk and the possible outcomes. It develops objective research spanning a variety of topics with its strategic research programs: aging and retirement; actuarial innovation and technology; mortality and longevity; diversity, equity, and inclusion; healthcare cost trends; and catastrophe and climate risk. The institute has a large volume of topical research available.

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