Authors

Aakanksha Sharma & Abishek Chopra

Special thanks to Siddhanth Agarwal

Date of Report: 18th October 2023

Table of Contents

History of Insurance

In the ancient world, the Babylonian and Chinese traders recorded the first forms of insurance. To limit the loss of goods, merchants would divide their items among various ships that had to cross treacherous waters This would reduce the loss per ship if something were to happen. One of the first documented loss limitation methods was noted in the Code of Hammurabi, written around 1750 BC[1]. Under this method, a merchant receiving a loan would pay the lender an extra amount in exchange for a guarantee that the loan would be cancelled if the shipment were stolen.

Image: Code of Hammurabi

As the ancient world evolved, maritime loans with rates based on favourable travel seasons surfaced. Around 600 BC, the Greeks and Romans formed the first types of life and health insurance with their benevolent societies. These societies provided care for families of deceased citizens.

Standalone insurance policies not tied to contracts or loans surfaced in Genoa in the 14th century. This is where the first documented insurance policy came from in 1347.

Pedro de Santarém penned the first book printed on the subject of insurance. The literature was developed by 1488 but was not published until 1552.

In U.S. history, the first insurance company was based in South Carolina and opened in 1732 to offer fire coverage.

1818 saw the advent of the life insurance business in India with the establishment of the Oriental Life Insurance Company in Calcutta. General Insurance in India has its roots in the establishment of Triton Insurance Company Ltd., in the year 1850 in Calcutta by the British.

[1] The Code of Hammurabi (image top right) was one of the earliest and most complete written legal codes proclaimed by the Babylonian king Hammurabi, who reigned from 1792 to 1750 B.C. The Hammurabi code of laws, a collection of 282 rules, established standards for commercial interactions and set fines and punishments to meet the requirements of justice

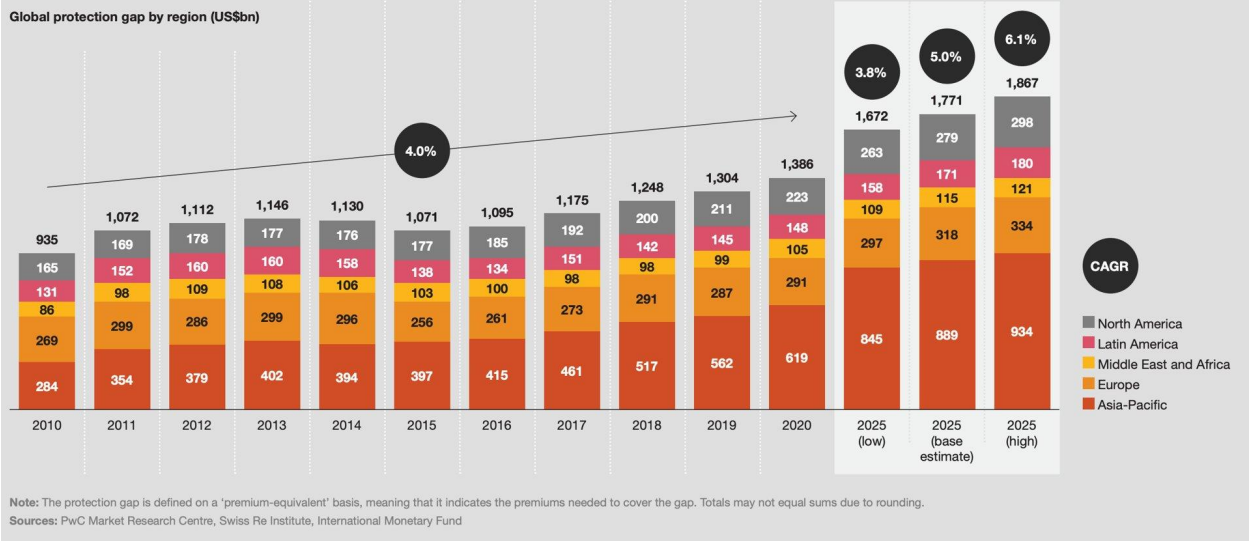
Indian Insurance - catching up and poised to grow

Despite witnessing growth over the past two decades, insurance penetration and density in India still lag considerably behind that of more developed nations. However, this is on the cusp of change, fueled by progressive regulations and increasing consumer affluence & awareness.

1. Key metrics to understand the gap and penetration levels of insurance

Global Protection Gap is defined on a 'premium-equivalent' basis, measured as the premium required to cover the gap between potential losses & losses already insured. For example: considering all risks and probabilities, if the potential loss in the world is $100 and of that losses worth $20 are covered via insurance, the premium required to cover the remaining potential loss of $80 is called the global protection gap. This currently stands at $1.7 Tn globally, of which APAC contributes 50%, indicating a large delta that needs to be covered.

Chart: Trend on Global Protection Gap, across years



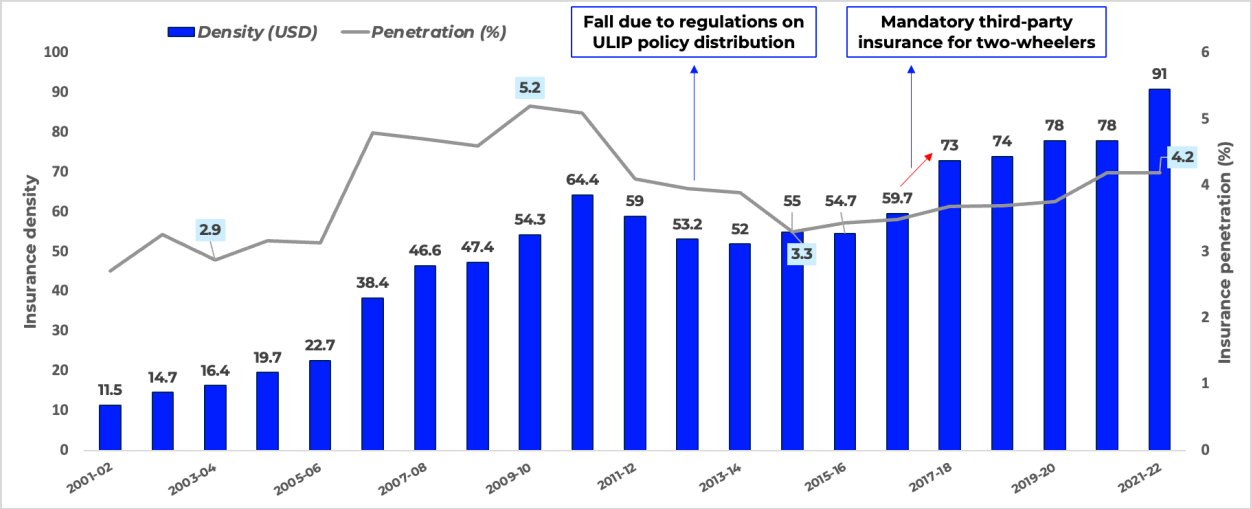
While the global protection gap indicates the premium to cover the gap, 2 other metrics help to understand the penetration from a macro level - Insurance Penetration and Insurance Density.

Insurance penetration is computed as Total Annual Premium / GDP. This metric compares the level of insurance development within the country and across

countries. India has an insurance penetration of 4.2% vs. 11.7% in the USA, 7.0% global average, and 3.9% in China (2022)[2].

Insurance density is measured as Total Annual Premium / Population. This metric is usually used to understand the extent of insurance coverage per person within a country. India has an insurance density of $91 per person vs. $ 872 global average and $8,193 for the USA (2022)[3].

Chart: Trend of Insurance Penetration and Density in India



The insurance penetration in India has grown from 2.9% (FY04) → 5.2% (FY10) → 3.3% (FY16) → 4.2% (FY22). Regulations by IRDAI have most often been the reason for movement in penetration. For example, between FY11 to FY16, caps on commission and lock-in periods on ULIPS were introduced, affecting insurance penetration and density. During FY17, IRDAI introduced mandatory third-party insurance for two-wheelers & cars for 3 & 5 years, respectively, which further boosted these metrics.

2. Progressive regulations

IRDAI in its press note[4] stated its vision as 'Insurance for All by 2047'. The aim is that every citizen has an appropriate life, health, and property insurance cover, and every enterprise is supported by appropriate insurance solutions. Regulators have eased the regulation on multiple vectors like investment, product development & distribution to achieve these objectives.

[2] Insurance pentration numbers obtained from IRDAI annual report, Swiss Re, Sigma
[3] Insurance pentration numbers obtained from IRDAI annual report, Swiss Re, Sigma
[4] IRDAI Press note - https://irdai.gov.in/web/guest/document-detail?documentId=1624671

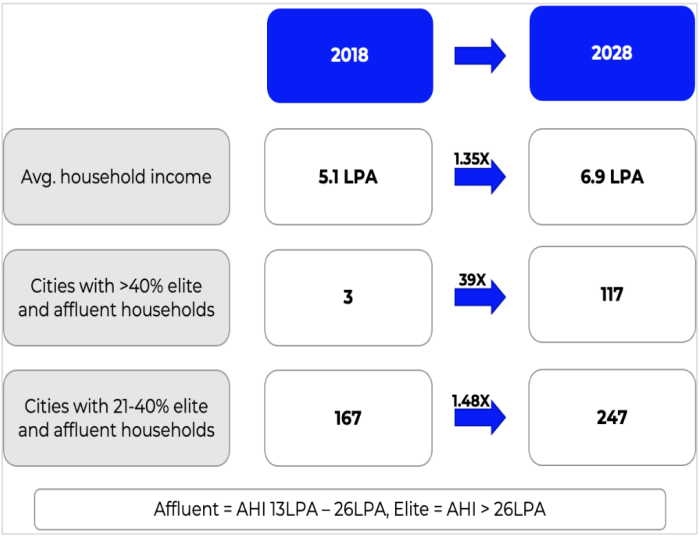
- **To increase capital flows and ease the capital raise process**, regulators have allowed PE funds to invest up to 25% without being named as promoters They have also increased the FDI limit to 74%. The threshold for raising capital without regulator approval has been increased.
- **To enable product innovation & growth**, regulators have:
    - Eased up sandbox and approval-related regulations;
    - Introduced use & file procedures to help insurers launch products without approval.
    - Provision for review of rejected applications.
- **To enable wider reach/penetration**, regulators are drafting new policies & amending existing policies w.r.t commission payment, caps on commission, caps on the number of tie-ups agents can have, etc.

3. Increasing Consumer Affluence & awareness

Multiple income-driven macro factors indicate increasing disposable incomes and hence, a **higher ability to pay** for insurance products:

- Average income of middle-class Indian families tripled from ₹ 4.4 Lakhs (FY13) to ₹ 13 Lakhs (FY22)[5].
- Number of cities with '> 40% elite and affluent households'[6] is expected to grow 39x from currently 3 cities to 117 cities by 2028[7], indicating a higher addressable market for insurance products.

Image: Increasing household incomes



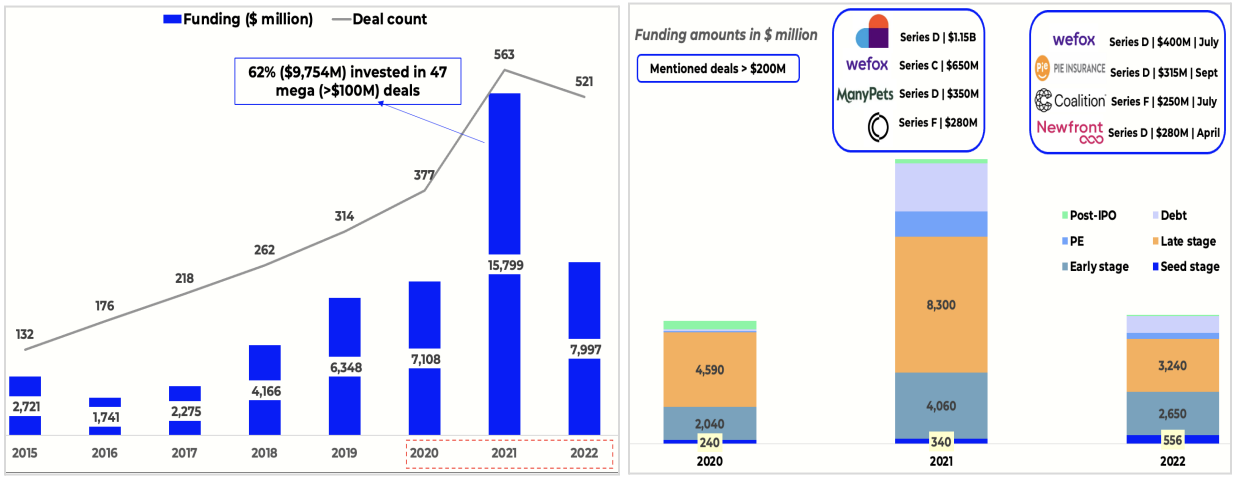
Additionally, multiple awareness campaigns run by IRDAI, insurance companies, and government initiatives aid in increasing **intent to buy** insurance.

[5] Source - MoneyControl
[6] Elite household - Annual Household Income of more than ₹ 26 Lakhs p.a.; Affluent household - Annual Household Income of more than ₹ 13 Lakhs - 26 Lakhs p.a.
[7] BCG Estimates

InsurTech Funding - $40 Bn invested in Insurtech globally in last 5 years[8]

Globally, InsurTech funding has grown 4.5X from $ 1.7 Bn (2016) to $ 8 Bn (2022), driven by late-stage investments, indicating that companies that are scaling and have proven market fit with strong fundamentals are getting funded across stages.

Chart: Global Funding Trends in InsurTech



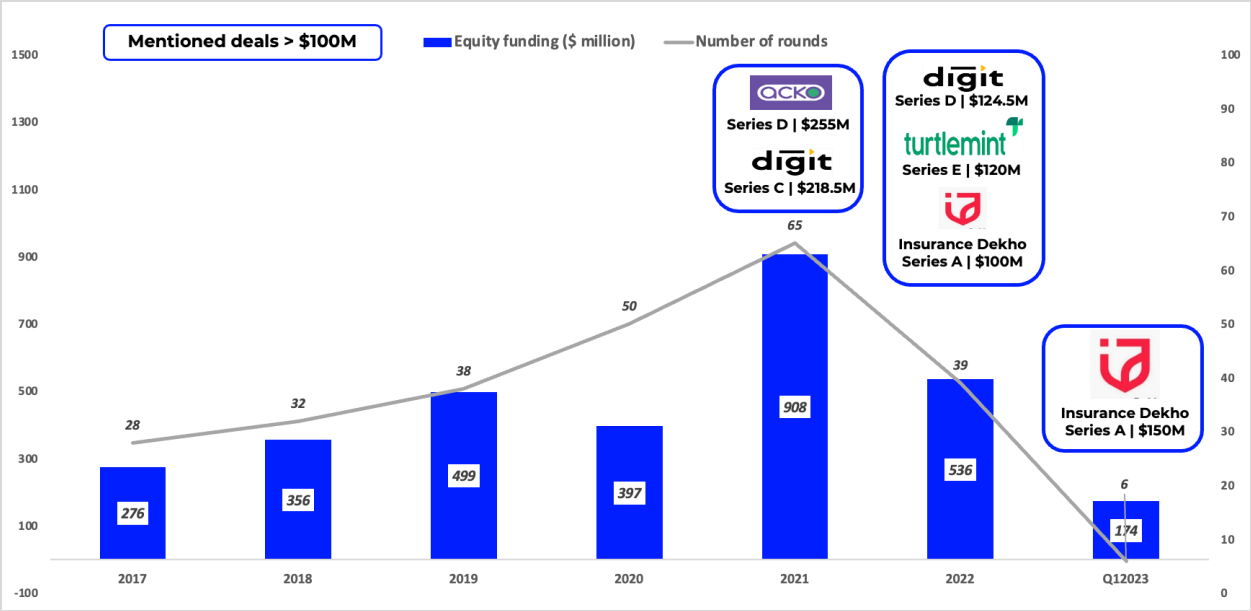
From the above chart, it is apparent that while 2021 was an anomalous year with excessive funding, 2022 remained strong with funding inflow. Companies like WeFox, Pet Insurance, and Coalition raised late-stage rounds in excess of $200M in 2022. While deal count & value of early-stage investments fell across many sectors in 2022, both deal count and value increased for InsurTech, indicating investors' continued interest in InsurTech.

Investors of private capital have significant investments in InsurTech. Accelerators and incubators like Y Combinator, TechStars, and PlugandPlay have made 20+ investments at early-stage. Prominent VC funds like Accel, Sequoia, and Nexus have done 25+ funding rounds across growth to late stage. Also, (Re)Insurers like MunichRe, MS&AD, and AXA Venture are actively investing in InsurTech, doing 100+ deals yearly since 2020.

Indian InsurTech funding grew at a modest rate of 2X from $ 276 M (2017) to $ 536 M (2022). These have been primarily driven by funding in insurance carriers like GoDigit and Acko who have raised total funding across years of $543M & $500M, respectively, or distributors like Policy Bazaar, TurtleMint, and Insurance Dekho, who have raised $674M, $250M & $150M respectively.

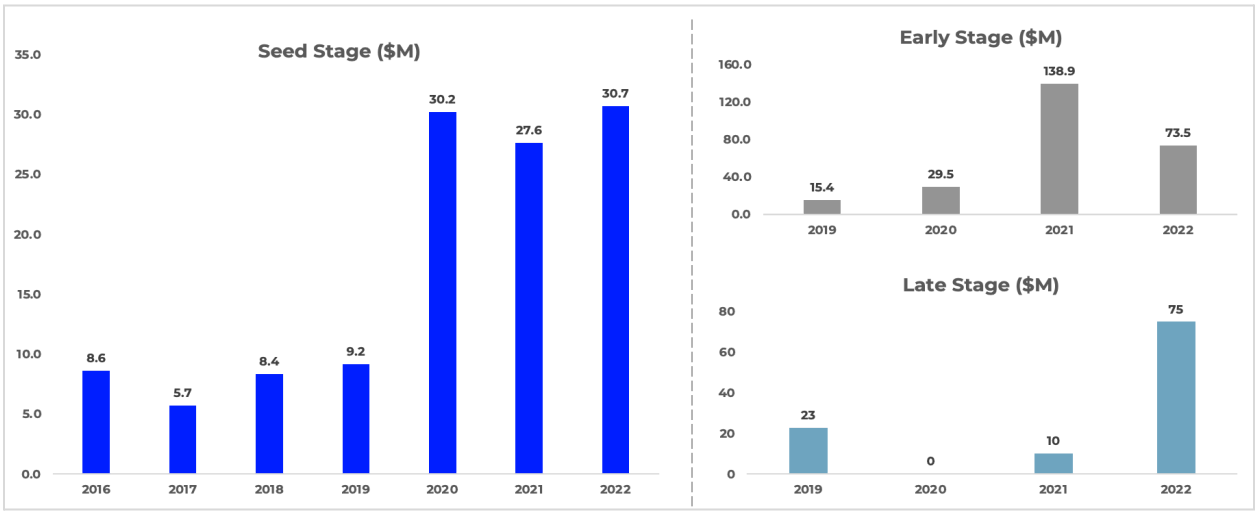
[8] All data under 'Funding in Insurtech' section is obtained from Tracxn & Gallagher Re report

Chart: Indian Insurtech Funding Trend



Given the skew in funding to 7 companies - Acko, Digit, Navi, Turtlemint, InsuranceDekho, RenewBuy and Policybazaar, we excluded the funding rounds of these companies to analyze the trend in seed, early-stage, and late-stage funding. The learnings are as below

Chart: Indian Insurtech Funding trend in seed, early & late stage individually



Seed and early-stage funding (albeit a small base) has been on an upward trend, indicating new companies being funded in the sector.

Late-stage investments have been available for businesses with proven business models. For example, Zopper raised Series C of $75M in 2022. Zopper is an API platform that helps B2C insurance companies to integrate with carriers for seamless flow.

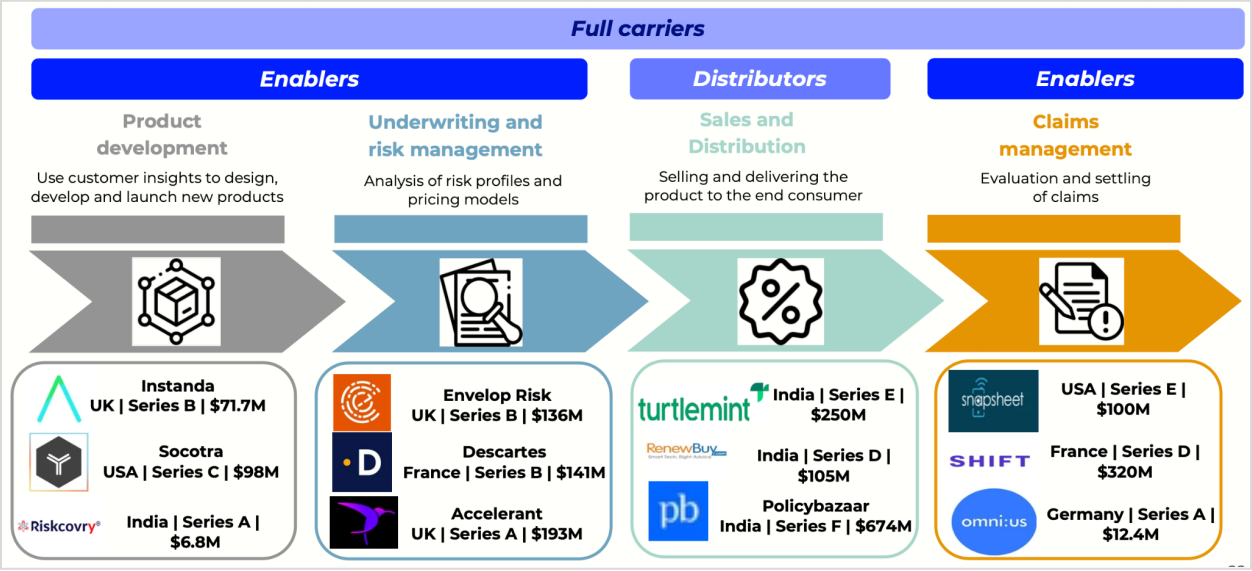
While Indian InsurTech is in its infancy, it has already seen notable successes in India - 3 unicorns (PolicBazaar, Digit & Acko); and one successful exit (PolicyBazaar IPO at a market cap of $6.7 Bn), indicating viable exit options.

Historically, funding in InsurTech has lagged in India. However, with several macro drivers and tailwinds, it is expected to increase. Prominent multi-stage funds have made investments in this space and continued to follow on till later stages.

Chart: Investments in Insurtech by a few prominent funds in India

Insurance Value Chain - Both modular and monolithic

Chart: Insurance Value Chain[9]



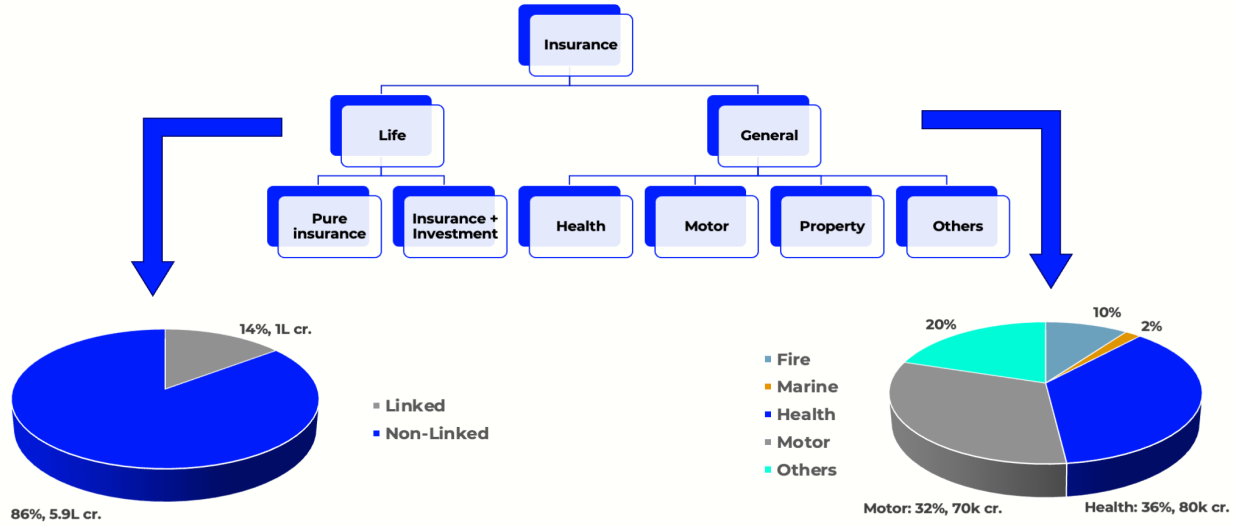
Key segments of the insurance value chain include product development, underwriting & risk management, sales & distribution, and claims management. Typically, Insurance companies with large balance sheets have all capabilities in-house, whereas, new and small-to-mid-size insurance companies have a mix of in-house + outsourced capabilities.

Given India is an under-penetrated market, insurtech companies enabling the distribution of insurance products are the first ones to pick up pace & become large. These include companies like PolicyBazaar, Turtlemint, Insurance Dekho, and Acko, each having distributed/sold premiums worth $100M at least.

Globally, there are large companies present in other parts of the value chain as well, however, in India, we are yet to see companies building in those spaces and growing. A key risk factor is the limited customer set (max 100 insurers) for such companies in India compared to the US and EU, where there are thousands of insurance companies to sell to.

[9]Deal data obtained from Tracxn

Indian Insurance - Driven by life insurance, non-life/general catching up.



In India, the insurance sector represents a substantial $120 Bn segment (4.2% of the GDP), comprising ~$90 Bn in life insurance and ~$30 Bn in non-life insurance.

The life insurance segment is primarily driven by Non-Linked products contributing to 86% ($77 Bn) of the total premium. Non-linked insurance plans are traditional insurance plans that only offer comprehensive financial protection to one's family in case of one's unfortunate demise during the policy tenure. These insurance plans are not linked to the market, so their returns are not based on the market's performance.

The non-life insurance segment is primarily driven by Health and Motor Insurance, contributing 36% ($11 Bn) and 32% ($10 Bn), respectively. Other insurance segments include fire, marine, commercial, crop, etc.

1. Life Insurance - less suited for rapid innovation

Life insurance segment has certain characteristics which makes it tricky for any start-up to build a meaningful outcome. These include:

- Standardized products, limited scope for innovation & personalization, and simple value chain with limited scope for value addition by 3rd party. The only exception is using 3rd parties for distribution.
- The life insurance business is more of a treasury & asset management business. Identifying the right premium price and managing the AUM are the key functions. Both of these are core to the operations of life insurance companies. Thereby reducing the scope for third-party vendors

- While the share of private insurers is on the rise, LIC continues to dominate the segment with a 62% market share.

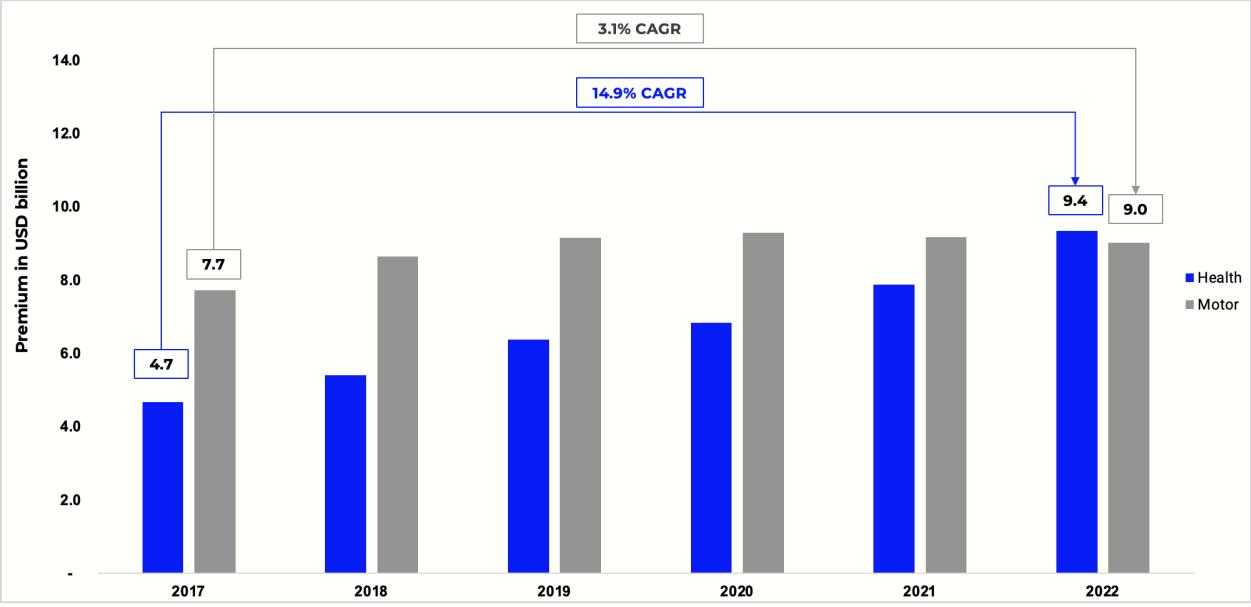
Having said that, we believe there is an opportunity for becoming a full-stack life carrier with distribution strength, who could capture market share and become a significant player in this segment, akin to how GoDigit captured the general insurance segment. For other business models within the life segment, while there is scope for some innovation, building a meaningful outcome might be challenging given the market dynamics.

We shall now shift focus to general insurance where we believe, there is a higher possibility of innovation and growth.

2. General Insurance - leading the growth in Indian Insurance

The 2 key sub-segments within general insurance are health and motor. Until 2022, motor was the largest segment, and is now replaced by health insurance. Health grew at 14.9% CAGR from 2017 to 2022, whereas motor grew by a modest 3.1% CAGR during the same time frame.

Chart: Growth in health and motor insurance since 2017



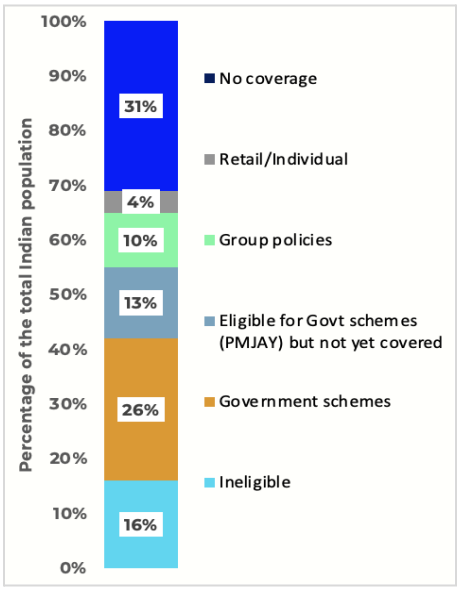
Motor insurance is commoditized, easy to sell, limited complexities in claims and is fairly addressed by multiple start-ups. Hence there is less scope for innovation which could lead to large outcomes. Health, on the other hand, is under-penetrated and

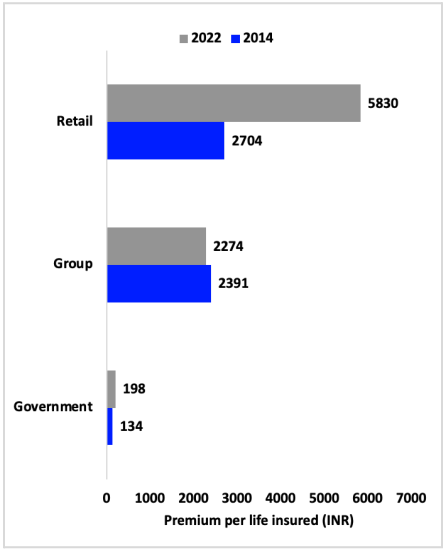
has tremendous potential for growth. Other lines in general insurance are critical and could be a lucrative opportunity when combined with motor or health.

Health Insurance - The future

44% population (63 Cr) do not have a health cover

- 16% of the population is ineligible for any type of health insurance.
- 4% of the population have purchased health policies on their own.
- 10% of the population is covered under group policies via their employees.
- 26% population is covered under government schemes, which is a big driver of population coverage; however, people covered under government schemes are inadequately covered.
- 44% (31% + 13%) of the eligible population is not covered under any health insurance (whether government or private).





26% population falling under government schemes are inadequately covered

Comparison of premiums paid per life insured across categories is a good proxy to measure if a life has been adequately insured (a higher premium indicates higher coverage). Comparing the premium per life insured in retail vs. group vs. government schemes (chart on left) indicates that lives insured under govt. schemes are significantly under-insured - a premium per life insured of ₹ 198 under govt schemes is just 3.3% of ₹ 5,830 premium per life insured under retail, indicating a big gap.

Under-penetration of health insurance has kept out-of-pocket expenses high in India

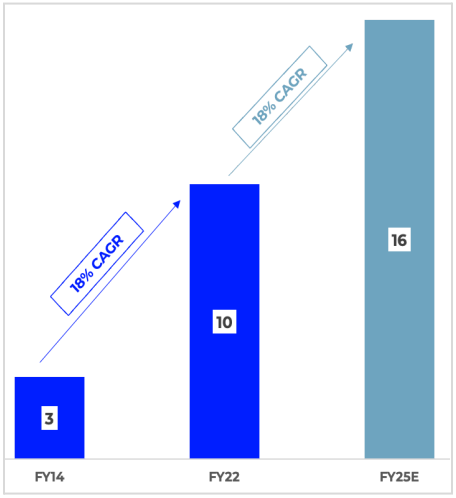
The average share of out-of-pocket expenditure on health remains very high in India at 55% (i.e. if a person incurs ₹ 100 on medical expenses, ₹ 55 is spent out-of-pocket).

The global average for out-of-pocket expenditure is 33%. Developed nations like the USA have an out-of-pocket expense share of 11%, and France is at 9%. Further, India's total healthcare expenditure as a % of GDP is low at 3.6% vs. the global average of 8.8%.

Health insurance is projected to grow @ 18% CAGR to $ 16 Bn by FY25

Strong tailwinds and government focus on building a Unified Health Interface (UHI) across the nation under the Ayushman Bharat Digital Mission are likely to drive the growth in health insurance.

Strong macro tailwinds include:

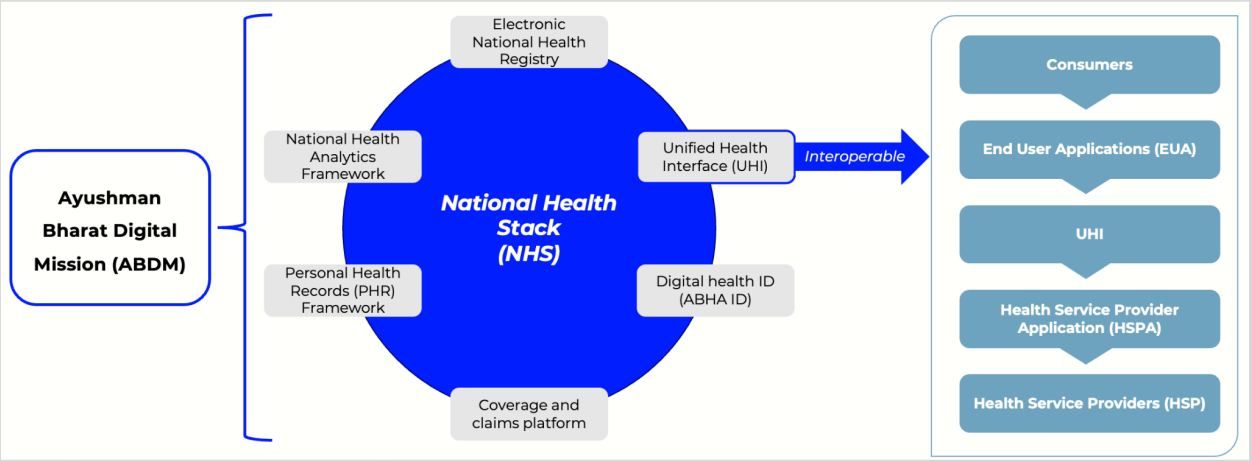


- **Rising income level (per capita Net National Income)** - ₹ 172k (2x since 2014), indicating increased ability to pay for insurance products
- **Increased awareness due to COVID-19** indicating the intent to purchase insurance products may increase
- **Improved life expectancy to 70 years (vs 62 in 2000)** indicates an increased need for longer health policies.
- **Expansion of hospital network** covered under insurance to 14,000 hospitals. This will help promote health insurance as people would have hospitals with insurance coverage near them.
- **Government policies like Pradhan Mantri Jan Arogya Yojana (PMJAY)**, will help boost insurance coverage to the uninsured segment and bring them under the ambit of insurance. PMJAY is the largest health insurance scheme in the world, providing cover of ₹ 5 Lakh for the bottom 40% of the families.

Ayushman Bharat Digital Mission (ABDM) catalyzing health insurance from multiple vectors:

The Ayushman Bharat Digital Mission (ABDM) is a digital health program launched by the Indian government to support integrated care and universal health coverage in India. The mission aims to strengthen India's digital health ecosystem to support all Indian citizens by providing them with Ayushman Bharat cards, enabling them to access healthcare services across the country.

Chart: Components of Ayushman Bharat Digital Mision (ABDM)



ABDM is expected to have the following implications for the insurance industry:

- **Increased demand for health insurance:** With Ayushman Bharat aiming to provide health coverage to most people, there is expected to be an increase in demand for health insurance in India specifically driven by govt. schemes.
- **Better data to price risk:** With ABDM, insurance companies can access more historical data to price policies accurately and reduce risks.
- **Reduced touchpoints in claims management:** The Ayushman Bharat Digital Mission will enable faster and more efficient claims management, reducing the need for multiple touchpoints in the process.
- **Value-based care[10] gaining traction:** With the advent of digitization, value-based care is expected to gain traction, which will have implications for the insurance industry in India.
- **Inclusion of digital illiteracy:** The mission is focused on solving the widespread digital illiteracy in India, and inclusion is one of the key principles of ABDM. This mission will ensure that all citizens can access healthcare services wherever needed.

In conclusion, the Ayushman Bharat Digital Mission is expected to have a positive impact on the insurance industry in India by increasing demand for health insurance, improving efficiency in insurance processes, and promoting value-based care.

Driven by these macro factors, we believe health insurance is going to be the segment that sees the most innovation and growth.

[10] Value-based care - Value-Based Care (VBC) is a health care delivery model under which providers — hospitals, labs, doctors, nurses and others — are paid based on the health outcomes of their patients and the quality of services rendered.

Themes that are likely to play out in Insurance Segment

Theme I: Transition to an ecosystem approach with a focus on preventive care

Health insurers are shifting from insurance covering just in-patient care to comprehensive coverage, including out-patient, diagnostics, pharmacy, and wellness services. Insurers are offering wellness propositions to their customers and designing products with elements of preventive care embedded in them.

The comprehensive coverage can be broken down into two parts - Core services, which shall be covered under insurance, and value-added services, which encourage policyholders to ensure their overall wellness and preventive care.

Core services are expanded to include, in addition to in-patient services, Outpatient services, diagnostics, and pharmacy.

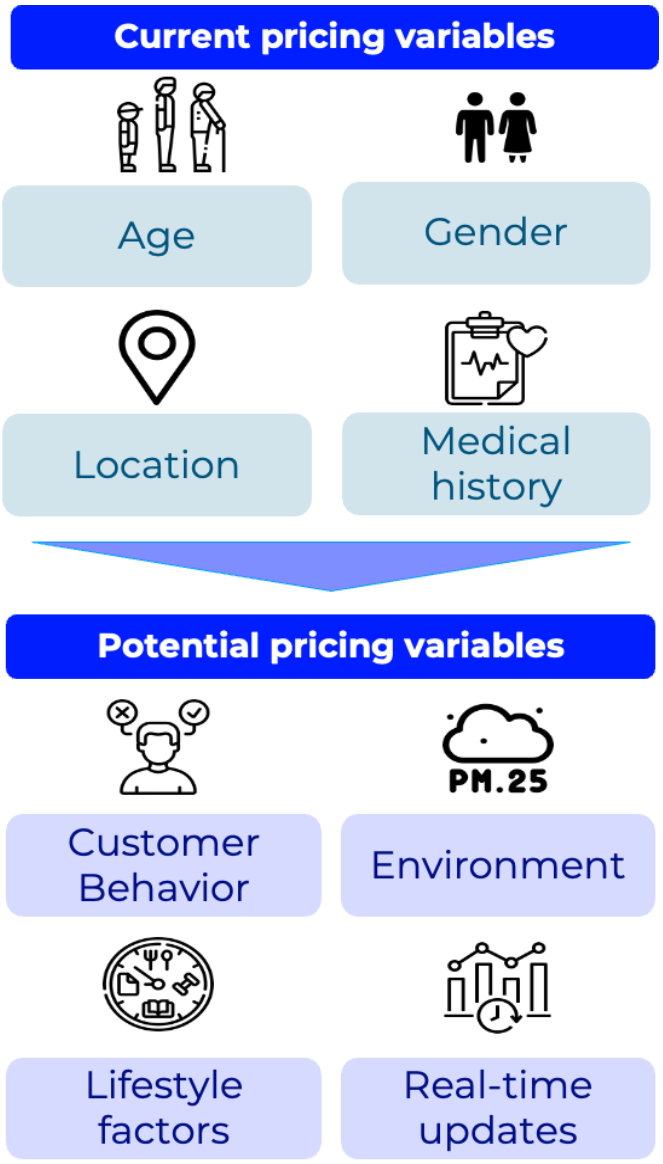
Value-added services - include offering health insurance add-ons that cover:

- teleconsultation costs,
- lab-tests costs,
- doctor consultation cover,
- annual preventive health,
- check-up cover,
- physiotherapy sessions,
- diet, and nutrition e-consultation.

These will be provided on a cashless basis, at an extremely pocket-friendly cost, well within the reach of common citizens. Each of these services contributes to preventive care, which also aids in reducing premium prices. Additionally, the insurers offer wellness programs to policyholders, which encourage policyholders to undertake healthy behaviour/activities that lead to reward points/discount vouchers, which can be redeemed while renewing the policy. This has a dual benefit - (i) the policyholder achieves good health and (ii) lower claims to insurers.

Theme II: Better underwriting capability with more data and machine learning

When a prospective customer shortlists a policy, the insurer asks for certain information to help the insurer determine the right policy price. Traditionally, the information obtained includes any existing health conditions, type of work (to check if the workplace is prone to health hazards), age, gender, location, and family medical history (in most cases, this is not available in detail).



The above-stated information is more static and historical. With the advent of ABDM & smart devices (like smartwatches), there is scope for more accurate, real-time & comprehensive data, which shall assist the insurers in aptly pricing the policies.

ABDM can provide comprehensive historical health records of policyholders. Smart devices can help provide more recent and lifestyle information to generate consumer analytics, which would become a valuable and dynamic input in pricing models.

Insurers plan to leverage all the possible data sources and machine learning to assist them in coming up with newer, better pricing models to appropriately price risk.

Theme III: Smooth and seamless claims management

Claims are the most critical touchpoint where the customers expect as little friction as possible. The claims journey is very different for each product within health insurance itself. There is an opportunity to solve customer issues related to claims management using data, machine learning, and blockchain.

Issues in the current claims management process include:

- **Excessive paperwork/proof requirement:** Policyholders must submit all the bills & proofs related to hospitalization and treatment to avail claims. The process is entirely manual and requires multiple visits for the policyholder to get the claim.
- **Lengthy processing time:** Health insurance claims settlement averages 20-46 days in India, compared to 3-5 days in the US, where standardized processes, hospital-insurer data sharing, and instant access to electronic records expedite resolutions.
- **Claim denials and disputes:** Many insurers deny claims unfairly, causing lengthy disputes and financial stress for policyholders.
- **Pre-Authorization[11] disputes:** Lack of transparency, manual processes & lack of SOPs lead to delays/denials in pre-authorization critically affecting patients.
- **Coordination with insurance and health providers:** Insurers and health providers operate in silo's and their systems do not speak with each other, which creates unnecessary steps and friction in the claims process.
- **Lack of customer support:** Health policies are complex and hence, customer support becomes essential for policyholders to navigate the system to file claims. However, most insurers do not have high-quality customer support, which affects claims experience.

Insurers can leverage technology to create an interconnected ecosystem of systems for a seamless flow of data which reduces the need for an elaborate claim filing process. Data from Smart / IoT devices and other sources coupled with machine learning can help validate claims much faster. The settlement process can be automated by leveraging smart contracts on the blockchain.

[11] Pre-authorization is a requirement by health insurance companies that patients obtain approval for a health care service or medication before the care is provided. The pre-authorization process involves the physician or hospital submitting a request to the insurance company to approve a specific medicine, medical device, or procedure. The insurance company then evaluates the request to determine whether the item is medically necessary and covered by the plan

Theme IV: Fraud Detection - Potential Global Play

Insurance fraud is a significant problem. In the USA alone, total losses due to fraudulent claims are estimated to be around $308 billion annually. Insurance fraud in India amounts to about ~$4 bn every year and the amount is set to grow in proportion with the Insurance market as a whole.

Frauds are of two types - (i) soft fraud, and (ii) hard fraud. Soft fraud involves exaggerating the damage caused by a real accident. (Eg: showing hospitalization charges of ₹ 1L instead of ₹ 95,000). Hard frauds, on the other hand, involves faking an incident that could trigger the insurance claims (Eg: faking illness).

Using technology, interconnected systems, data and analytics, fraud detection and prevention can be achieved. Given this is a software play, this can become a global opportunity and does not have to be restricted to India alone.

Theme V: Gen AI in Insurance

Gen AI has several use cases in the insurance industry. These include:

- **Data Augmentation:** Generative AI can create new data based on existing data, which can be used to train machine learning models. This can help insurers improve their models' accuracy and make better decisions.
- **Content Creation:** Generative AI can create new content based on existing data, such as marketing materials or policy documents. This can help insurers to create more personalised and effective content.
- **Customer Support:** The insurance industry is known for its complex jargon, which is difficult for common citizens to understand. With the use of generative AI, insurers can build a chatGPT equivalent, which is fine-tuned for insurance use cases. This can help customers decode policies & regulations, leading to a better customer experience.
- **Personalized policy recommendations:** Generative AI can generate customised customer recommendations & experiences based on their preferences and behaviours This can help insurers to improve customer satisfaction and retention.

Generative AI has the potential to transform the insurance industry by improving efficiency, personalising policies, and reducing fraud. However, some challenges are associated with implementing generative AI, such as data quality and privacy concerns. Insurers must consider these challenges carefully and work with experts to develop effective generative AI solutions.

Theme VI: Other Themes

Embedded Insurance

Embedded insurance is a type of insurance that is integrated into another product or service, making it easier for consumers to buy insurance without actively seeking it out. It is an emerging trend in India's insurance market, with long-term growth potential. Embedded insurance provides customers with fast and reasonable coverage by bundling insurance protection with the purchase of a third-party good or service. It simplifies the purchasing process for consumers, customizes products, provides insurers with greater control over what they sell, and helps drive a very ethical relationship with the end consumer.

Examples:

1. **Bancassurance:** Bancassurance is a partnership between banks and insurance companies that has been around for the last 50 years, starting in France. It is a form of embedded insurance where insurance products are sold through banks.
2. **Travel insurance:** When you purchase a flight ticket, you can buy travel insurance for your booking with just a few clicks.
3. **Health insurance:** Health insurance can be embedded into other products or services, such as credit cards or bank accounts.

Parametric Insurance

Parametric insurance is an upcoming trend, with the most common use cases related to natural disasters and weather conditions. Parametric insurance contracts cover the possibility of an event occurring rather than the actual losses incurred due to the event. The contracts define a specific parameter, such as wind speed, rainfall, or earthquake magnitude, and a predetermined payout amount. The payout is triggered when the parameter is met, and a third party is responsible for verifying that the parameter was triggered

Examples:

1. **Nagaland:** The state of Nagaland has taken a parametric insurance cover to get financial protection against natural disasters
2. **Crop insurance:** Parametric insurance is used to provide crop insurance to farmers The insurance payout is based on the crop yield index, calculated using satellite data.

3. **Weather insurance:** Parametric insurance is used in India to provide weather insurance to businesses. The insurance payout is based on the occurrence of specific weather events, such as droughts or floods.

Concluding Thoughts

The InsurTech sector is poised for transformative growth, driven by progressive regulations, increasing consumer affluence, and heightened awareness. The sector, characterized by a rich history and dynamic innovations, is witnessing a surge in funding, indicating robust investor confidence. The Indian insurance landscape, currently dominated by life insurance, is experiencing a paradigm shift with non-life/general insurance gaining momentum. The under-penetrated health insurance segment represents a lucrative opportunity, with the potential to reduce the high out-of-pocket expenses burdening the Indian population. The integration of advanced technologies and the adoption of a customer-centric approach are pivotal in enhancing underwriting capabilities, streamlining claims management, and fortifying fraud detection mechanisms. The future of InsurTech is promising, with the prospect of delivering inclusive, efficient, and sophisticated insurance solutions.