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Longevity InsurTech Industry

2023

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Introduction

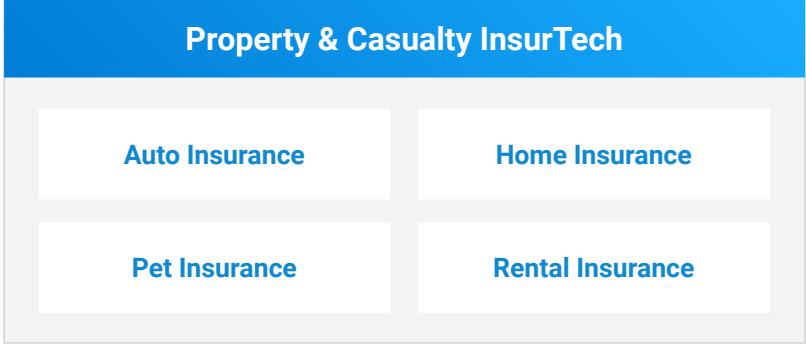
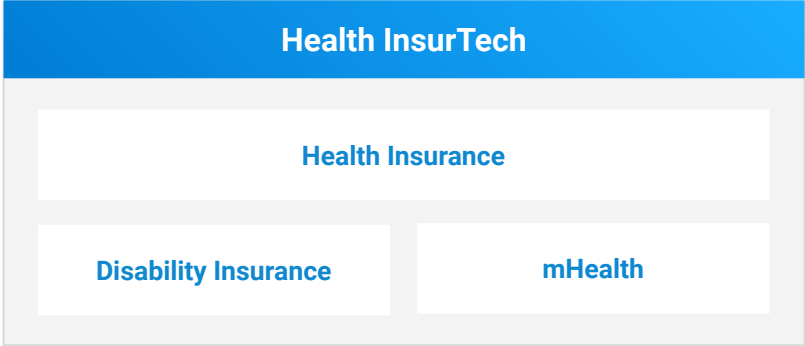
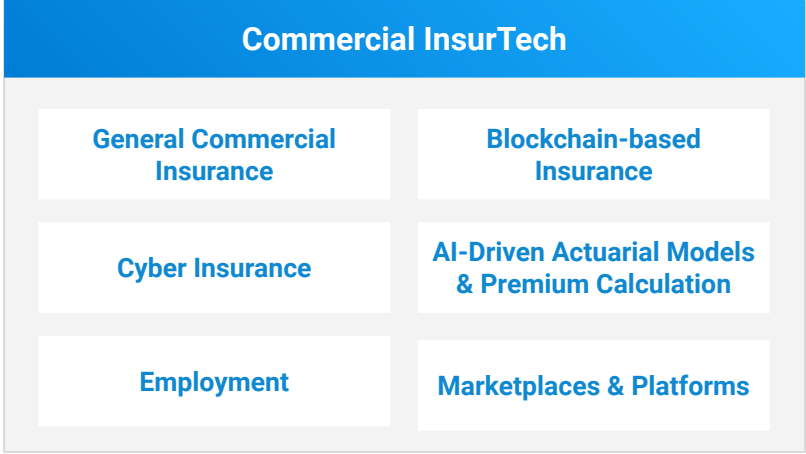
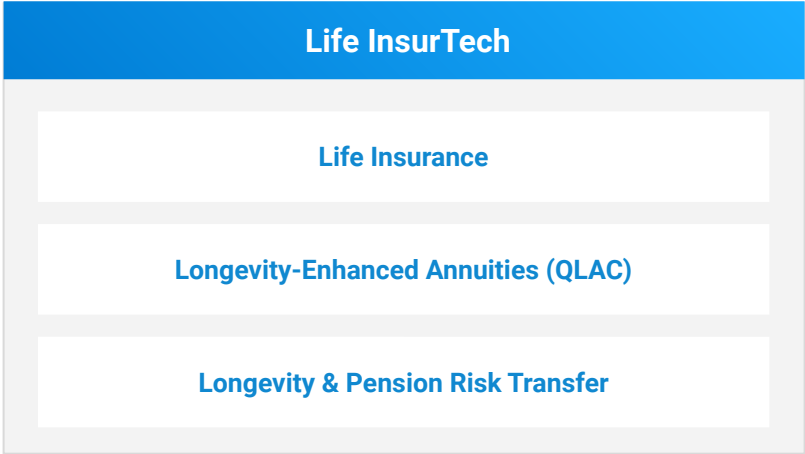
While the majority of practical outcomes in healthy Longevity will be driven by precision health technologies, they will also require an assembly of other, nonbiomedical components, including traditional financial products and services such as Longevity Insurance and InsurTech.

Longevity Insurance covers the wide range of products and services associated with the risks of ageing population. Life insurance companies have relatively flat exposure to Longevity risk, with annuity portfolios offsetting insurance policies. Hence, the market has overall negative exposure to Longevity improvements. Reinsurers neither have the capacity, nor are willing to accept such a large risk. Capital markets, with their depth, capacity and experience in risk hedging, have the potential to hedge Longevity risk effectively.

Longevity risk is explicitly incorporated on a portfolio level of a life insurance company issuing participating contracts and being subject to default risk.

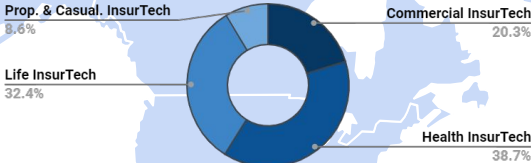
In this report, InvestTech Advanced Solutions shares its analysis of the Life and Health InsurTech market and outlines trends in products, plans, and prices from 2014 to 2023.

Longevity InsurTech Industry Framework

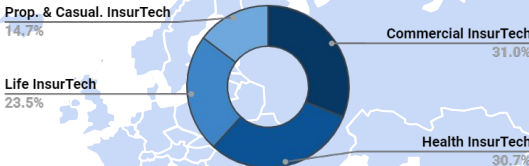


InsurTech Companies Geographical Distribution

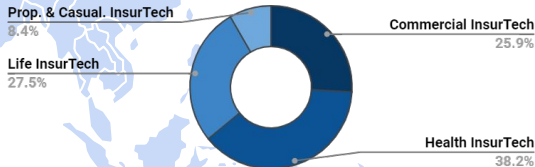
North America, 2,640 companies



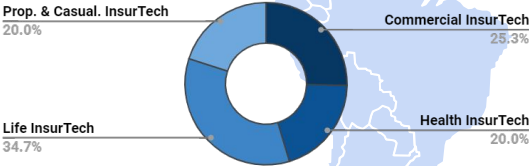
Europe, 1,160 companies



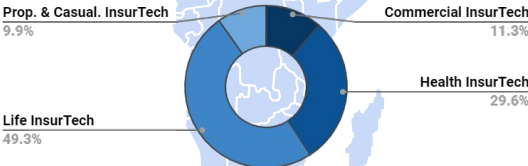
Asia & Oceania, 785 companies



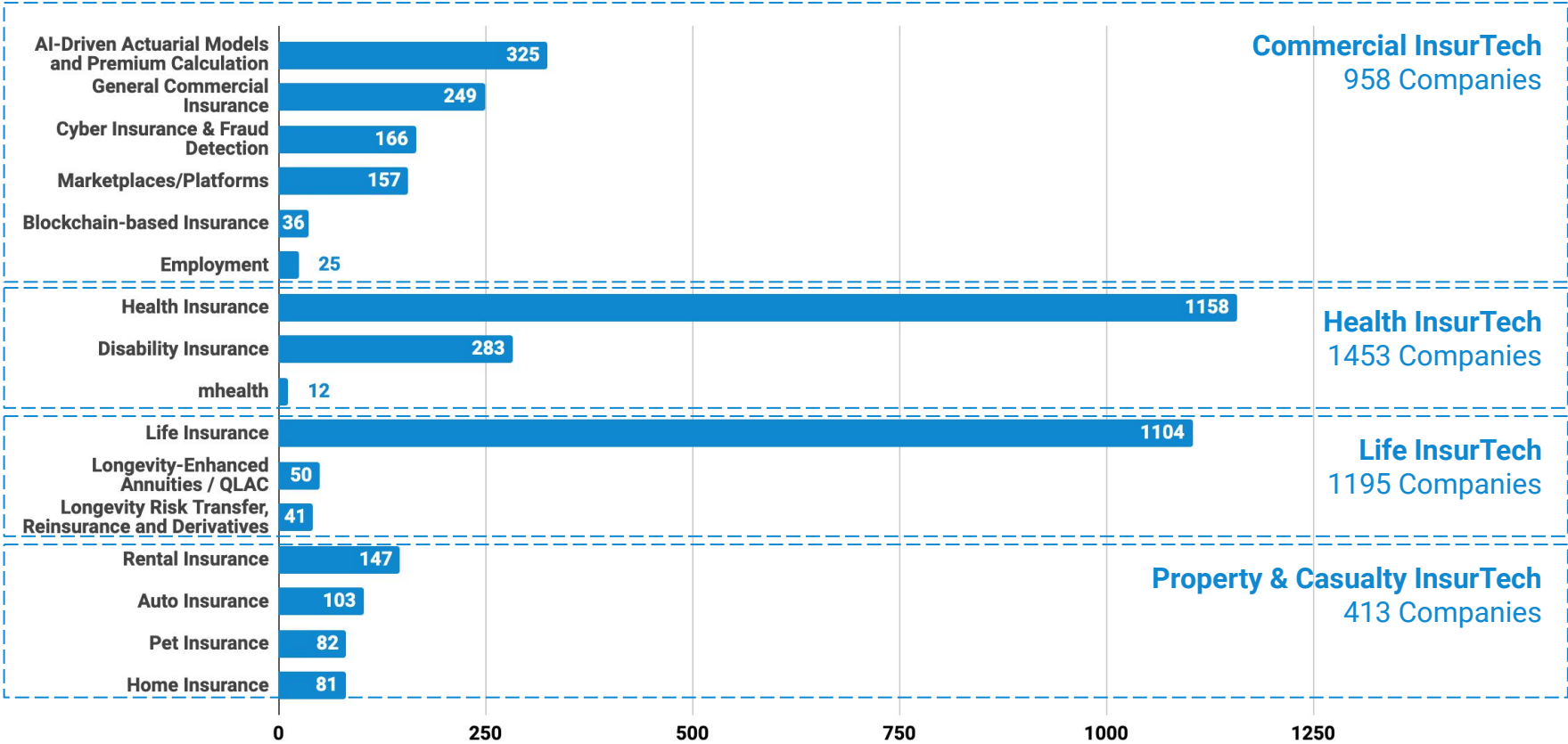
South America, 105 companies



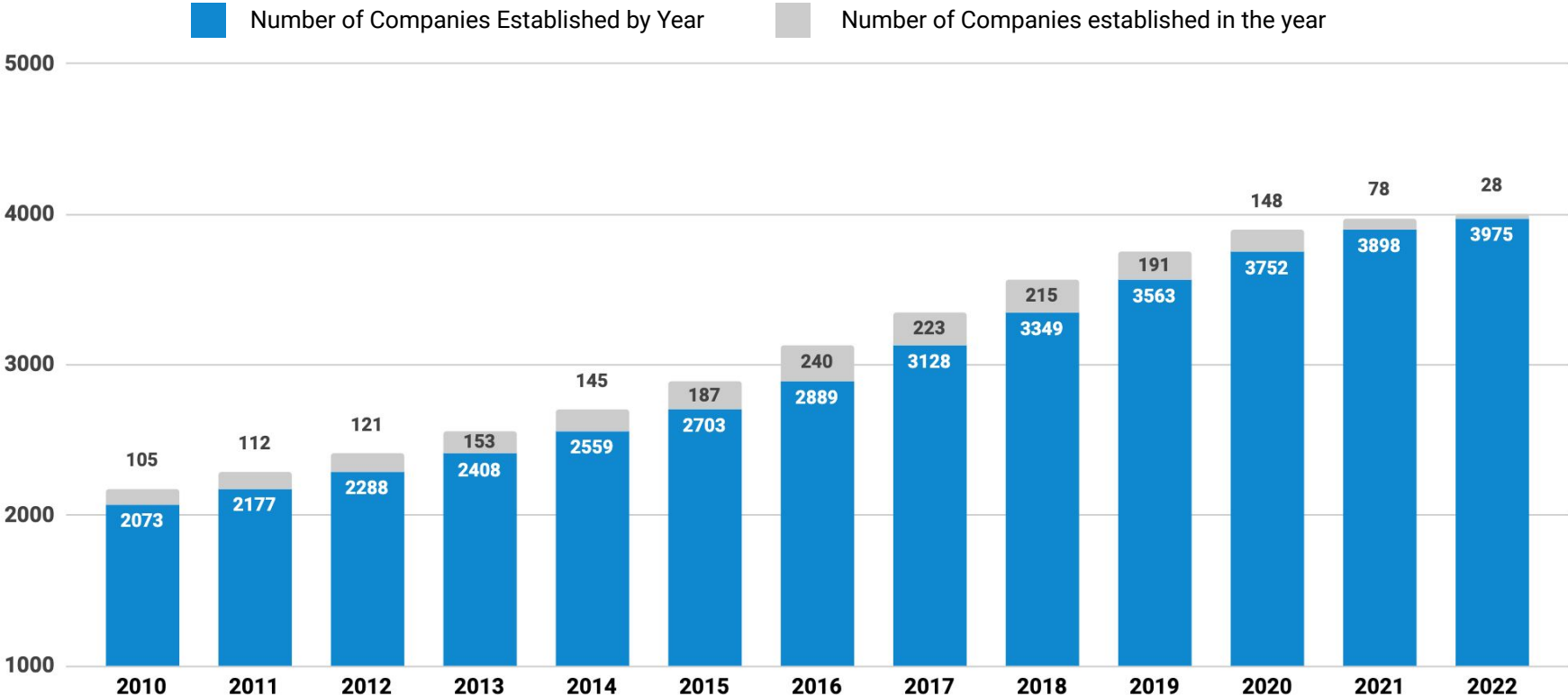
Africa, 100 companies



Companies Distribution by Industry Sectors



Cumulative Number of Established Companies

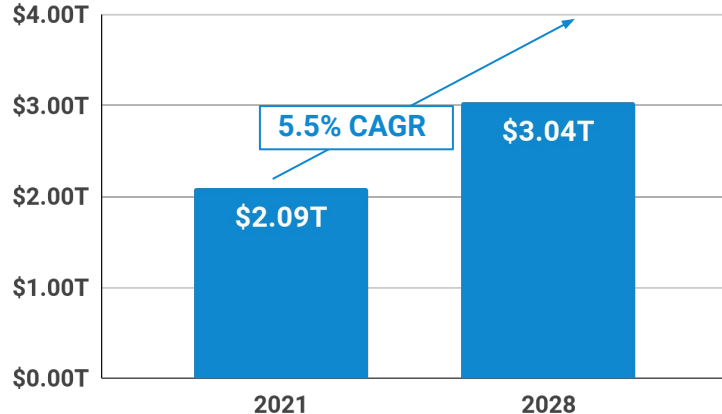


Macroeconomic Trends of Healthcare Insurance Industry

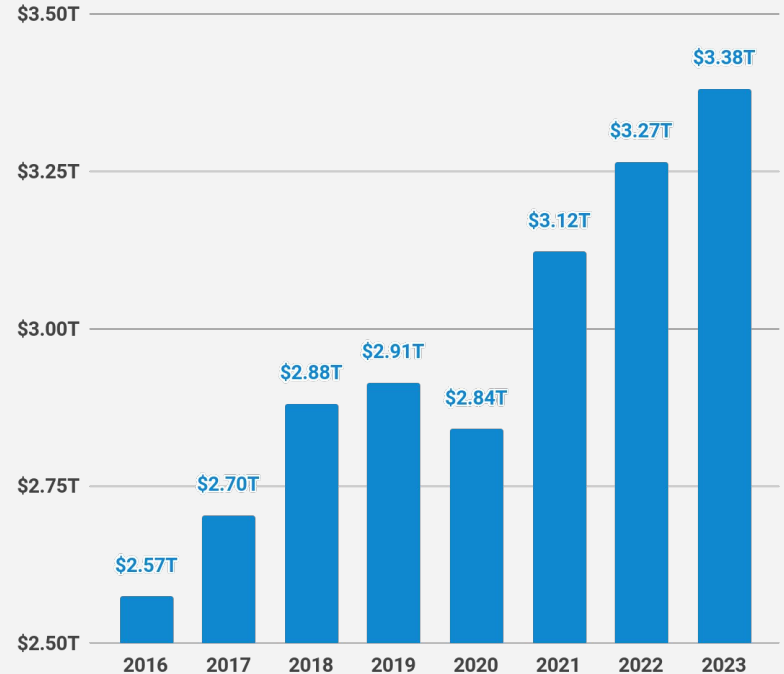
Insurance remains a growing industry even in the period of global economic slowdown: increased risk awareness will continue to support demand for life and health protection products.

However, during this period, insurers can face more intense competition. Most probably price will not suffice to attract customers but should be paired with convenient and personal digital experiences. Additionally, insurers will have to seek for options to optimize costs and revenue streams.

Projections of Global Health Insurance Market Size



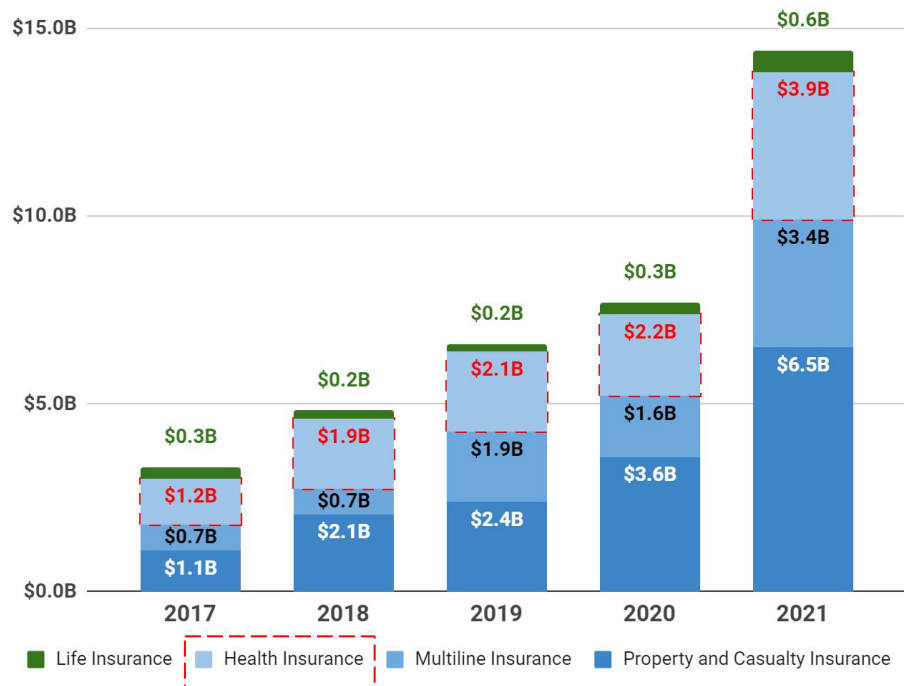
Global Life and Healthcare Insurance Premiums, Trillion, \$



Source: Swiss Re Institute

Investment Trends in Healthcare InsurTech

Global Investments in InsurTech Companies by Sectors



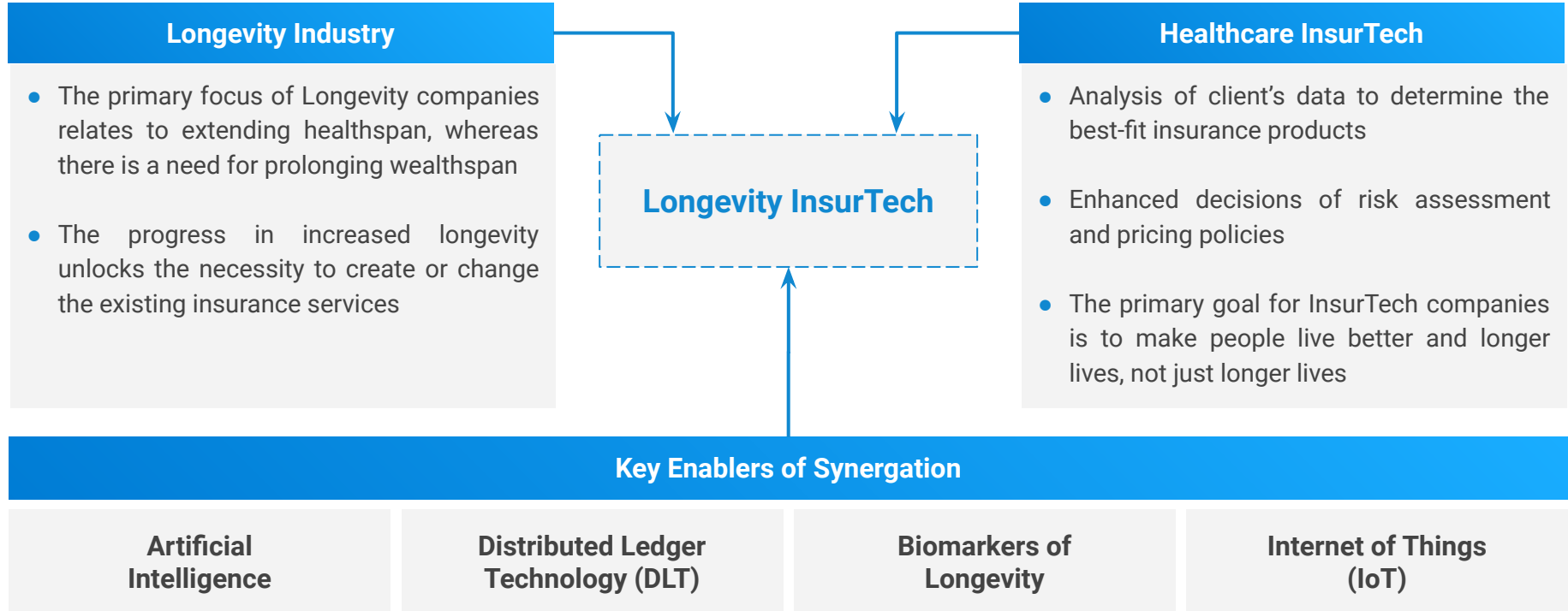
Globally, InsurTech companies in 2021 raised \$14.1 billion across 633 deals. This represents a 105% YoY increase in terms of deal value that is more than the previous two years combined.

HealthCare InsurTech sector has received \$3.9 billion investments in 2021 – an increase of about 81% from 2020 and roughly 27% of the 2021 total.

Growth of investments appears to be strongest for firms with leading-edge capabilities in AI, Big Data, application programming interfaces and digitalization across the value chain. InsurTech investors can succeed by screening for solutions that address the technology and commercial challenges facing the insurance industry.

Synergistic Effect of Longevity Industry and Healthcare InsurTech

There is a growing focus on how the insurance industry needs to adapt in order to adjust to increasingly long-lived population. Bundling wellbeing initiatives between longevity and insurance companies has a great potential to resolve the possible challenges in a more holistic manner.

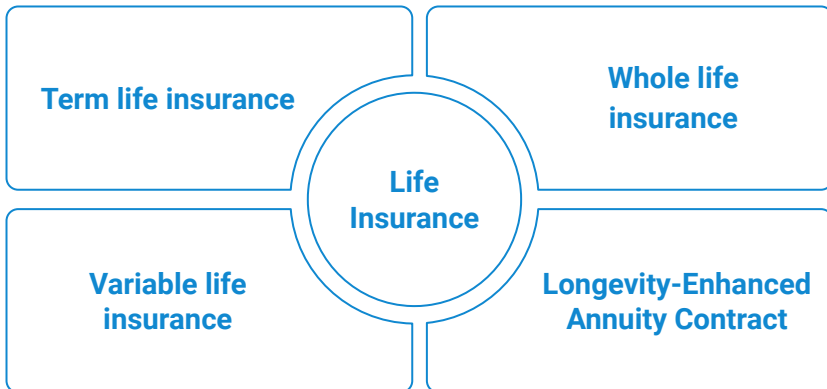


Life Insurance

There are various life insurance policies to choose from. Having a variety of life insurance policies from which to select is a great luxury. Still, it also requires research and thought to decide which policies are best for retirees.

Life insurance is one of the most challenging and expensive insurance types. Invasive health tests and questioning, with higher rates based on prior ailments and even the customer's residence, have expanded the protection gap in the last two years.

Digital insurers design products that can be acquired in minutes with a few clicks and customized by the user.



Market Trends

Longevity-Enhanced Annuities

This variation on a standard annuity **takes into account the health issues of a customer and provides an annuity reflecting their individual life expectancy**. An underwritten annuity offers higher regular income to applicants who are not in good health, or who in all likelihood have a lower life expectancy calculated using the standard annuity tables and mortality indices.

These products are for people over 70 who are already in need of medical care and have a shorter life expectancy than other people their age. Compared with a regular single premium, **immediate annuities pay a higher amount of monthly income because of this shorter life expectancy**. Costs vary by age and medical condition, but someone might get up to **50% more monthly payment than a healthy person**.

The enhanced annuities are predominantly associated with the following benefits:

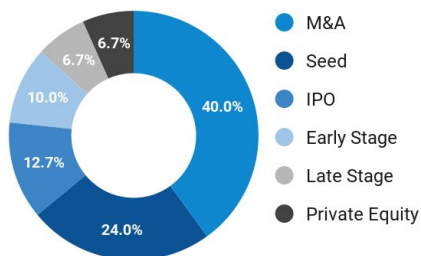
High enhancement and optimal rates

Opportunity of lasting income for consumers who have not purchased a standard annuity

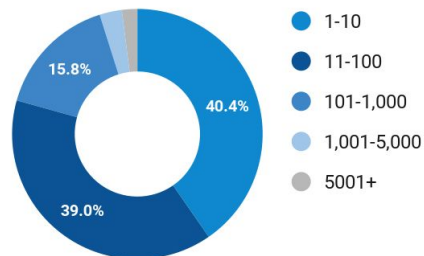
Fair longevity solution for older people with medical history

Life Insurance Subsector

Funding Status



Number of Employees

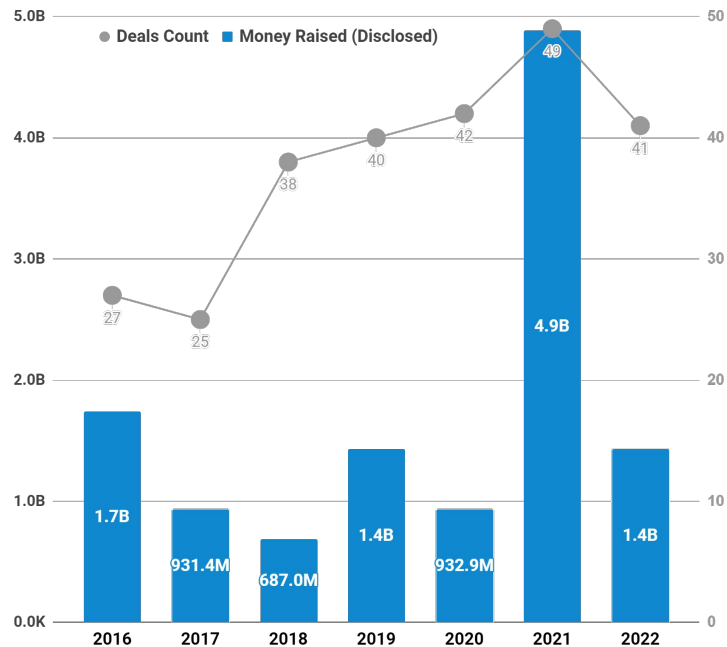


The M&A category is in the lead by funding status. Next are Seed and IPO categories. The Early Stage, Late Stage, and Private Equity round out the list.

In terms of number of employees, most companies have 1-10 employees 40.4%, 39% of companies have 11-100 employees, 15.8% have 101-1000 employees, and the smallest number of companies have 1000-5000+ employees.

The record high of private funding of Life Insurance has reached \$4.9B over 49 investment deals in 2021. Data is collected for 1093 companies.

Investment Dynamics in Life Insurance



Health insurance has made massive progress in the previous two years. The pandemic has made people more mindful of life's uncertainties and their lack of health-related disaster preparedness.

It has changed how people understand health insurance, helping them realize the importance of adequate coverage to address escalating medical costs. The requirement for seamless service and flexible coverage push insurance companies to develop innovative service models and cutting-edge products.

Health Insurance

Health
InsurTech

Disability Insurance

mHealth

Increasing Mental health focused services

COVID-19 has sparked more debates about mental health as part of complete therapy. In acknowledgment of the increased demand for mental health services, insurers now cover professional advice, access to meditation apps, and other methods to deal with mental trauma.

Parting Thoughts

New health insurance solutions meet client demands and offer a personalized customer experience. Rising middle-class knowledge of healthcare and retirement planning would support the rise of the health InsurTech sector.

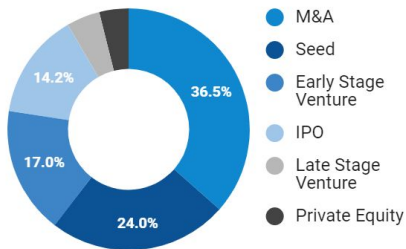
Virtual Delivery

Value chain actors are building a modern infrastructure for optimal patient interaction as virtual healthcare delivery becomes more critical. Real-time patient data improves health outcomes and medical management. Preventive care should be prioritized for whole-patient care.

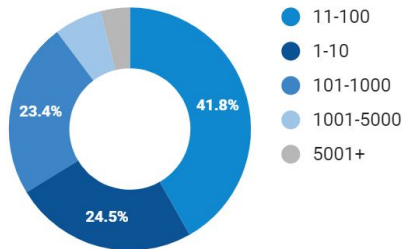
Data interoperability and cloud migration are required for virtual healthcare delivery and seamless care. Healthcare providers and insurers are researching cost-effective methods to handle, preserve, and use patient data.

Health InsurTech Subsectors

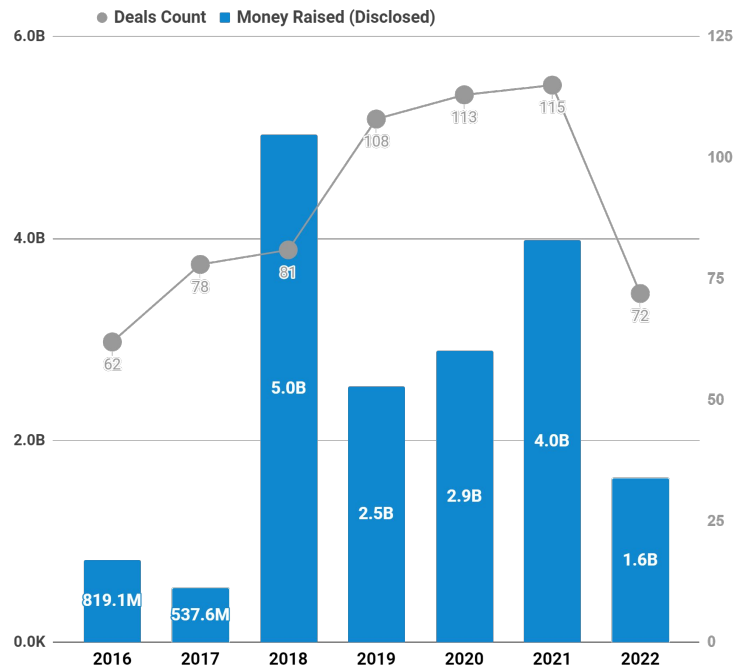
Funding Status



Number of Employees



Investment Dynamics in Health InsurTech



The M&A category is in the lead by funding status. Next are Seed and Early Stage Venture categories. The IPO, Late Stage Venture and Private Equity round out the list.

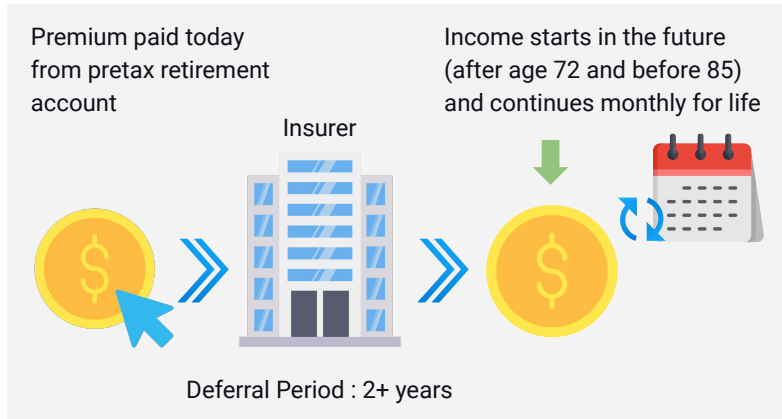
In terms of number of employees, most companies have 11-100+ employees 41.8%, 24.5% of companies have 1-10 employees, 23.4% have 101-1000 employees, and the smallest number of companies have 1001-5000+ employees.

A decrease in private funding of companies engaged in Health InsurTech has been observed in 2022, reaching \$1.6B compared to \$4B in 2021. Data was collected for 1371 private companies.

Qualified Longevity Annuity Contract (QLAC)

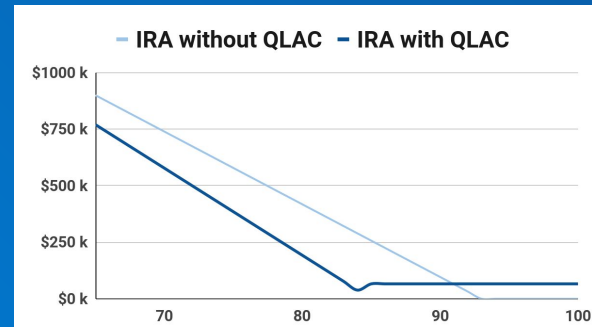
Another way to hedge individual longevity risk is a **Qualified Longevity Annuity Contract**. However, so far this instrument is used only on the US wealth-management market. A qualified longevity annuity contract (QLAC) helps a retiree not to run out of their individual retirement account (IRA) when they hope to live much longer than an average American, which is 77.5 years. QLAC guarantees fixed monthly payoffs after 85th anniversary and until death.

For example, with \$130,000 of his IRA balance, he can buy a QLAC that pays him a guaranteed \$5,500 per month starting at age 85 and continuing for the rest of his life.



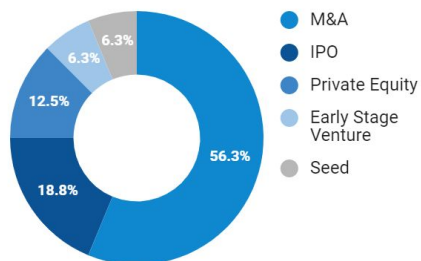
Main Mechanics:

- **QLAC is an income annuity.** An income annuity is a contractual agreement between client and an insurance company. In exchange for a lump-sum premium, the insurance company promises to give you a steady, guaranteed paycheck for life.
- **QLAC is a deferred income annuity.** A longevity annuity begins payments at a future date, typically 2-40 years after the premium is paid. The longer you delay starting to receive payments, the greater the size of the payments they'll be able to offer you.
- A QLAC is purchased with savings from your **qualified retirement account**. As a qualified annuity, the money used to make the purchase comes from **401(k), Traditional IRA**, or other qualified plan. The annuity maintains the special tax-deferred treatment meaning that QLAC buyer does not incur any penalties or pays any taxes until income payments begin.

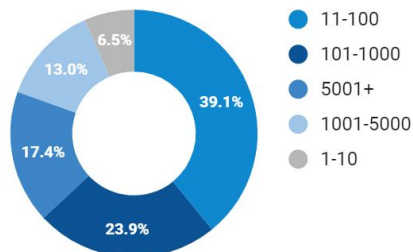


Longevity-Enhanced Annuities (QLACs and Others) Subsector

Funding Status



Number of Employees

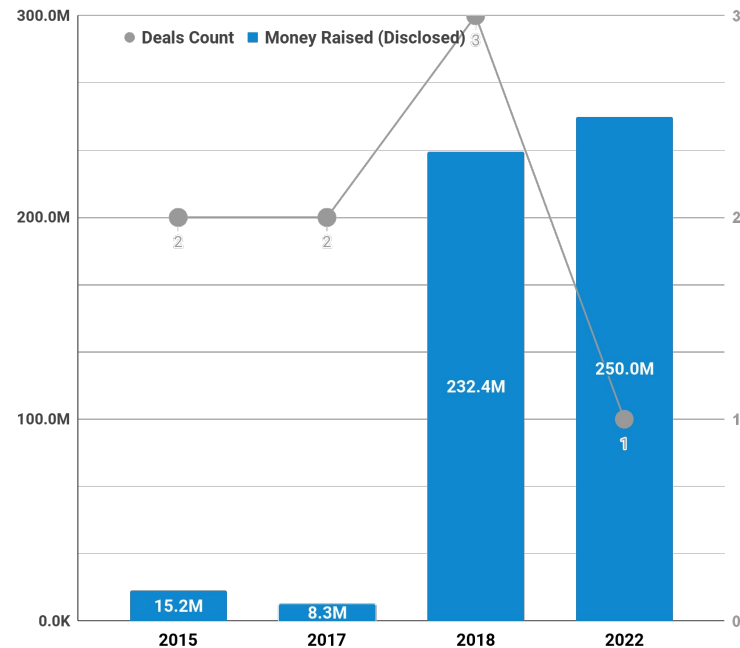


The M&A category is in the lead by funding status. Next are IPO and Private Equity categories. The Early Stage Venture and Seed round out the list.

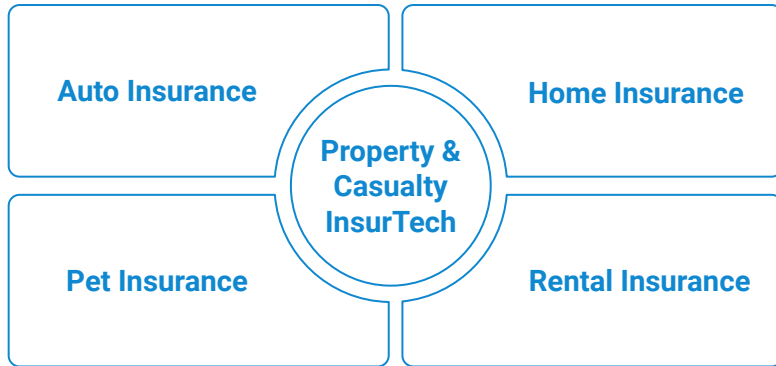
In terms of number of employees, most companies have 11-100 employees 39.1%, 23.9% of companies have 101-1000 employees, 17.4% have 5000+ employees, and the smallest number of companies have 1001-5000 and 1-10 employees.

The record high of private funding in Longevity-Enhanced Annuities has been observed in 2022 reaching \$250M over 1 investment deal. Data is collected for 48 companies.

Investment Dynamics in Longevity-Enhanced Annuities (QLAC)



P&C insurance protects you and your property. These InsurTech firms employ innovative technology to protect your house and automobile. Casualty insurance protects you if you're judged legally accountable for an accident that injures someone or damages their property. Property and casualty insurance are usually combined. Landlord insurance protects landlords against risks linked with rental properties. It typically consists of buildings and contents insurance, but it can also contain landlord-specific coverages such as property owners' liability, loss of rent, and tenant default insurance.



Property & Casualty InsurTech move to as-a-service providers

The Insurance executives are selecting cloud service providers and formulating cloud migration strategies. 55% of companies have already started transitioning key platforms to platform-as-a-service and infrastructure-as-a-service providers over the next two years.

Macro trends Impact

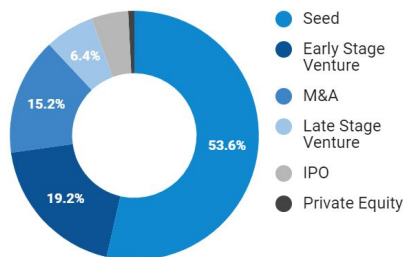
Changing social demographics, climate change, and technology/digital acceleration are top macro developments in P&C insurance this year. A shortage of IT skills is limiting digitization, while climatic factors like decarbonization affect regulation. The P&C companies focus on IT acquisition and retention, digitalization and data to generate new digital services, and sustainability measures.

The Personalization of Services

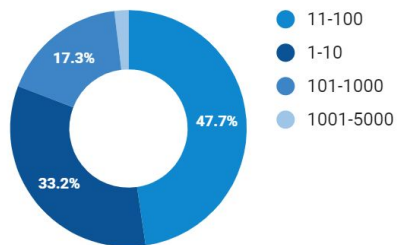
The Property & Casualty InsurTech industry focuses more closely on customer needs, provides differentiated products and services, expands insurance coverage, further enriches the insurance service experience, and enables the risk protection function of insurance.

Property & Casualty InsurTech Subsectors

Funding Status



Number of Employees

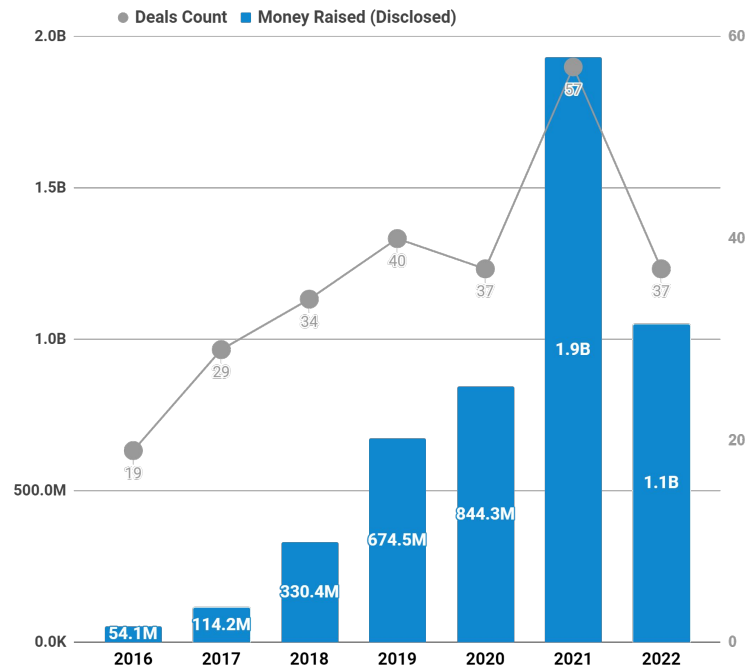


The Seed category is in the lead by funding status. Next are Early Stage Venture and M&A categories. The Late Stage Venture, IPO, and Private Equity round out the list.

In terms of number of employees, most companies have 11-100 employees 47.7%, 32.2% of companies have 1-10 employees, 17.3% have 101-1000 employees, and the smallest number of companies have 1000-5000 employees.

A decrease in private funding of companies engaged in Property & Casualty InsurTech has been witnessed in 2022, reaching \$1.1B compared to \$1.9B in 2021. Data was collected for 413 private companies.

Investment Dynamics in Property & Casualty InsurTech



AI-Driven Actuarial Models & Premium Calculation for InsurTech

The insurance industry has been experiencing a technology revolution over the past decade. Emerging capabilities such as telematics, AI, wearables and claims automation have become more prevalent as insurers have doubled down on using technology for optimization of both cost and processes. Nowadays Insurance Industry is embracing AI solutions for reaching higher performance through improving underwriting, customer experience and internal processes.

Big data may improve risk assessment. An insurance business may use big data and predictive modeling to count prospective customer difficulties and put them in a proper risk class before making a final choice.

Reasons of Growing AI Use in Insurance

Explosion of data from connected devices

The need for enhanced approaches to risks underwriting

Growing demand for personalised insurance products

Wider presence of open-source and data ecosystems

Big Data Trends of Longevity InsurTech

Big Data Analytics from Wearables

John Hancock, one of the oldest and largest North American life insurers, exclusively provides only interactive plans based on app and device data. Big Data in medical coverage raises data security, protection, and morality challenges.

AI-automating underrating

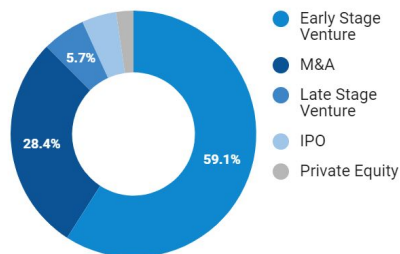
The AI algorithms may automate manual underrating operations, making them more efficient and decreasing claims and administration expenses. This allows enterprises to provide reduced rates to clients and compete in the market.

Personalization and pricing

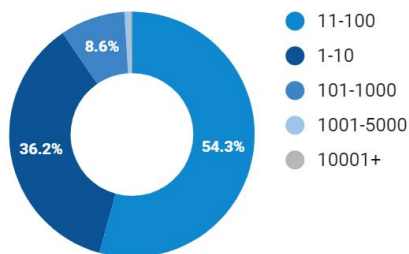
Everyone likes exceptional treatment. Companies have embraced personalization. Both unstructured and structured data analysis helps firms satisfy client demands. Big data-based life insurance may be tailored by considering a customer's medical history and activity tracker habits. The data may be used to determine a client- and company-friendly pricing strategy.

AI-Driven Actuarial Models & Premium Calculation Subsector

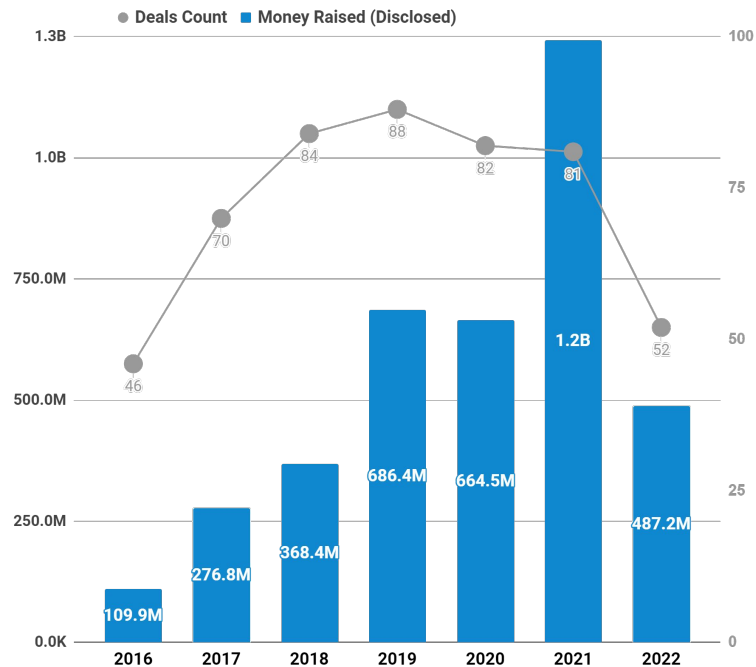
Funding Status



Number of Employees



Investment Dynamics in AI-Driven Actuarial Models & Premium Calculation

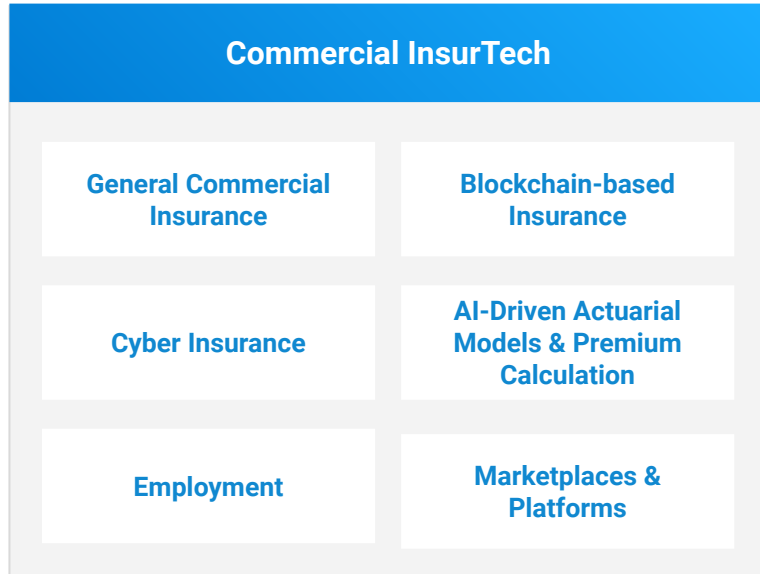


The Early Stage Venture category is in the lead by funding status. Next are M&A and Late Stage Venture categories. The IPO and Private Equity round out the list.

In terms of number of employees, most companies have 11-100 employees 54.3%, 36.2% of companies have 1-10 employees, 8.6% have 101-1000 employees, and the smallest number of companies have 1000-5000+ employees.

2022 has witnessed a decrease in private funding of companies engaged in AI-Driven Actuarial Models & Premium Calculation, reaching \$487.2M compared to \$1.2B in 2021. Data was collected for 322 private companies.

General Commercial Insurtech Sector combines the multiple advanced technologies used to protect against the most common risks of running a business, like General liability insurance policies and Cyber InsurTechs, as well as Blockchain-powered solutions, AI-Driven Actuarial Modeling, etc. Insurance marketplaces and platforms are also key pillars of the Longevity Insurtech ecosystem.



Insurance meets blockchain

The insurance industry is beginning to understand the importance that blockchain technology has evolved and will leverage over the insurance sector due to its security and immutability features. Blockchain claims to be the central repository of truth, allowing insurers to automate various portions of underwriting because the data in the blockchain is trustworthy and from a verified source.

The rising demand for cyber insurance

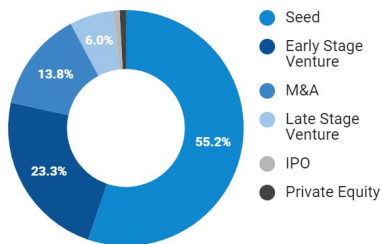
Cyber insurance demand is outpacing supply. Healthcare, services, retail, manufacturing, and government institutions, including education and financial services providers, need proper risk coverage. The insurance industry prioritizes clear language, adequate security, and risk transparency. For example, the ransomware industry hit a new height in 2022 and is attracting an increasing number of cyber criminals. According to Chainalysis, extortionists collected ransoms average of \$148,000 per successful operation, up from \$88,000 in 2017.

Insurtech-focused platforms

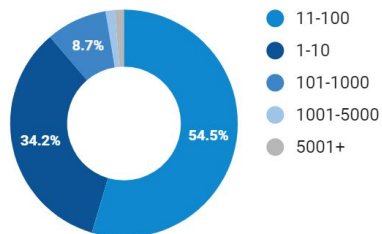
The current business model of venture capital funds does not support investments in InsurTech startups in a most efficient manner. The rising wave of InvestTech and InsurTech platforms and marketplaces offers multiple modern technological and organizational solutions to optimize investors relations, technology analysis, intellectual property trading, etc.

General Commercial Insurance Subsectors

Funding Status



Number of Employees

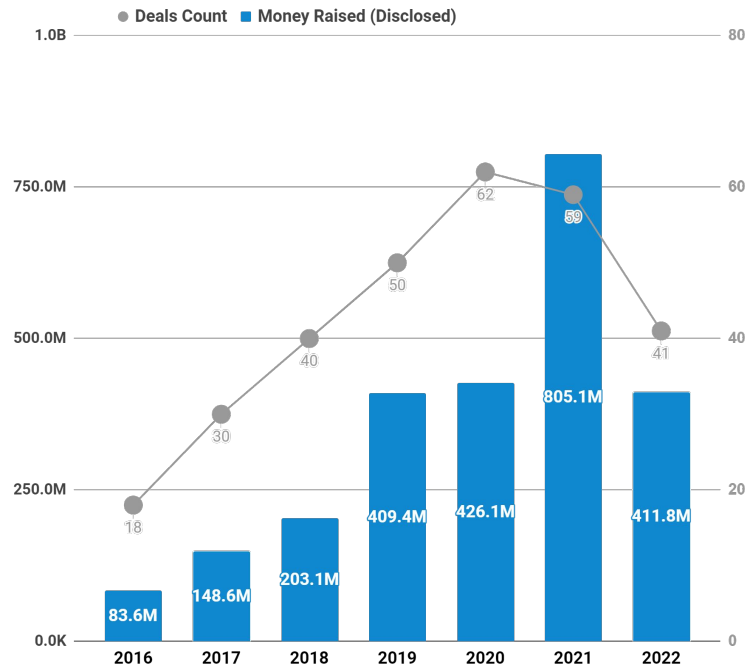


The Seed category is in the lead by funding status. Next are Early Stage Venture and M&A categories. The Late Stage Venture, IPO, and Private Equity round out the list.

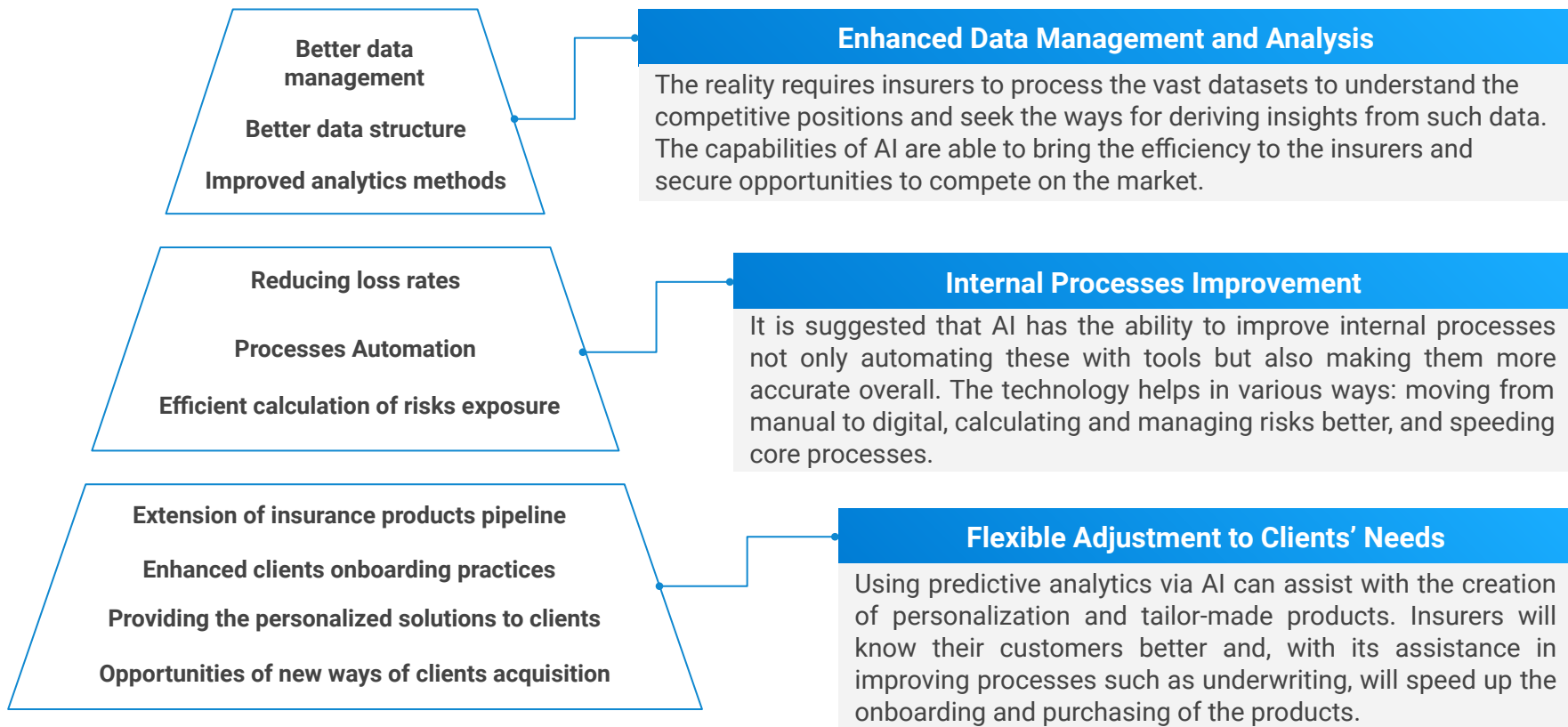
In terms of number of employees, most companies have 11-100 employees 54.5%, 34.2% of companies have 1-10 employees, 8.7% have 101-1000 employees, and the smallest number of companies have 1001-5000+ employees.

A decrease in private funding of companies engaged in General Commercial Insurance has been observed in 2022, reaching \$411.8M compared to \$805.1M in 2021. Data was collected for 249 private companies.

Investment Dynamics in General Commercial Insurance

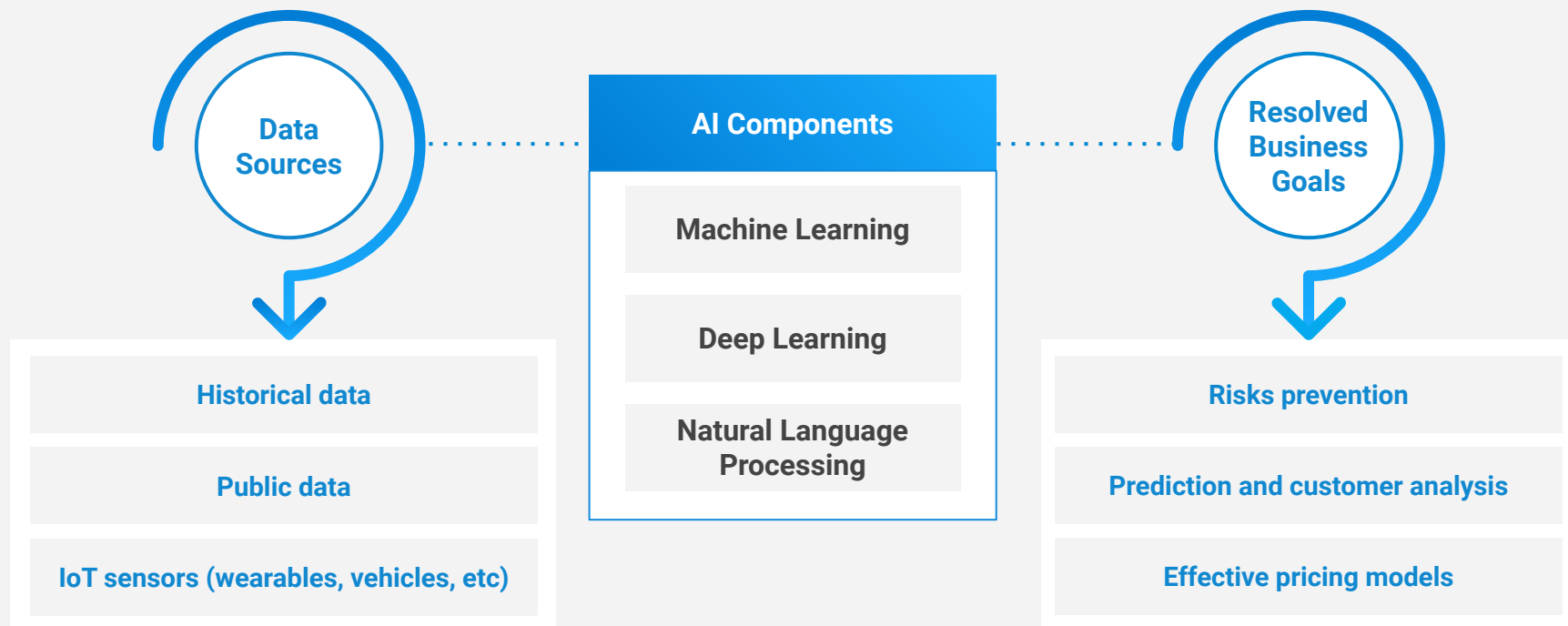


Value-creation Opportunities of AI in InsurTech



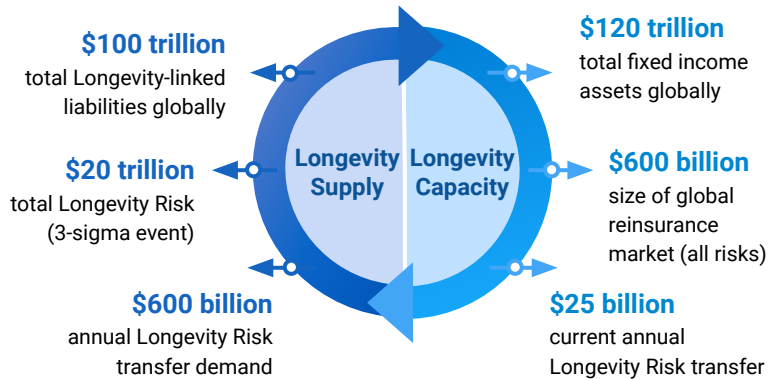
AI Capabilities to Solve the Needs of Insurance Companies

Artificial Intelligence is gaining traction within the insurance industry, and this time as more than just a fraud detection tool. It is completely revolutionizing how insurance products are experienced. Most insurers are experimenting with the technology. But those that do not use it as an opportunity to transform their business strategy and their focus risk being left behind.



AI Application Along the Insurance Value Chain

	Product development	Underwriting and risk-rating	Claims management
Text analytics and NLP	Scan and structure existing policies and product descriptions to develop future products faster and more efficiently	Scan for ambiguities and rate risks in insurance applications based on claims to detect fraud faster	Generate structured data sets based on claims reports to process claims faster
Recommendation engine	Analyze customer buying behavior based on sales data following product recommendations to improve offerings	Suggest risk categories for customers based on previous claims and events to prevent human errors	Recommend template for incoming claims based on historical similar claim reports to process claims more effectively
Conversational service solutions	Use feedback data based on customer conversations with virtual service agent to improve future products	Use a chatbot to lead risk related conversations based on natural language database to obtain specific facts from customers	Provide chatbot interface for claims reporting based on natural language base and historical claims data in order to improve efficiency
Speech recognition	Identify customer pain points with products through speech analytics of feedback to improve future products	Detect fraud based on voice analysis of customer calls in order to improve security measures	Automatic text production of speech claims including emotions and behavior based on phone calls in order to improve efficiency

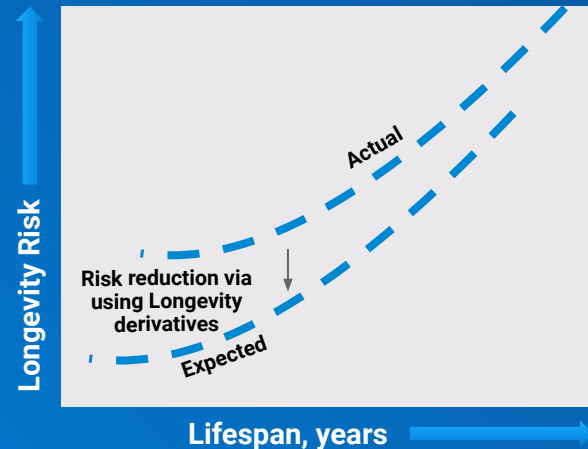


A new global capital market, the Life Market, is developing and “Longevity pools” are on their way to becoming the first major asset class of the twenty-first century.

Longevity risks arrive due to inaccurate predictions of the level of mortality rate and numbers of retirees. Another reason why managing Longevity risks has become more important for the entities is new regulation requirements. Solvency II is the directive in European Union law and it requires that insurance companies measure and evaluate Longevity risk and as a result increase the capital level required for Longevity risk.

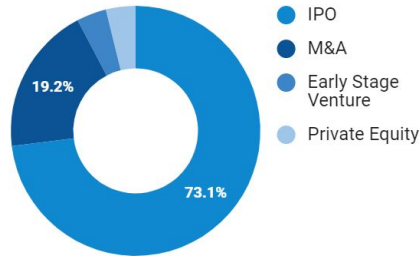
Insurance and reinsurance companies provide risk transfer mechanisms for institutions, predominantly pension funds. Risk transfer is a risk management technique whereby risk is shifted to a third party. In other words, it involves one party assuming the liabilities of another party. Purchasing insurance is a common example of transferring risk from an individual or entity to an insurance company. Globally, there is an enormous amount of Longevity-linked liabilities in public and private pension and annuity markets. The magnitude of Longevity risk dwarfs the capacity of traditional providers – capital markets investors must get involved.

Hedging with Longevity Derivatives

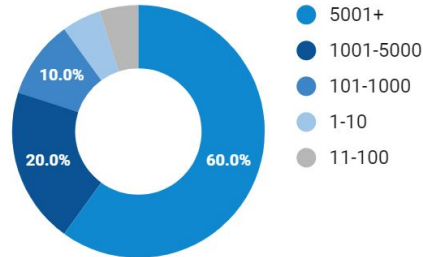


Longevity & Pension Risk Transfer Subsector

Funding Status



Number of Employees

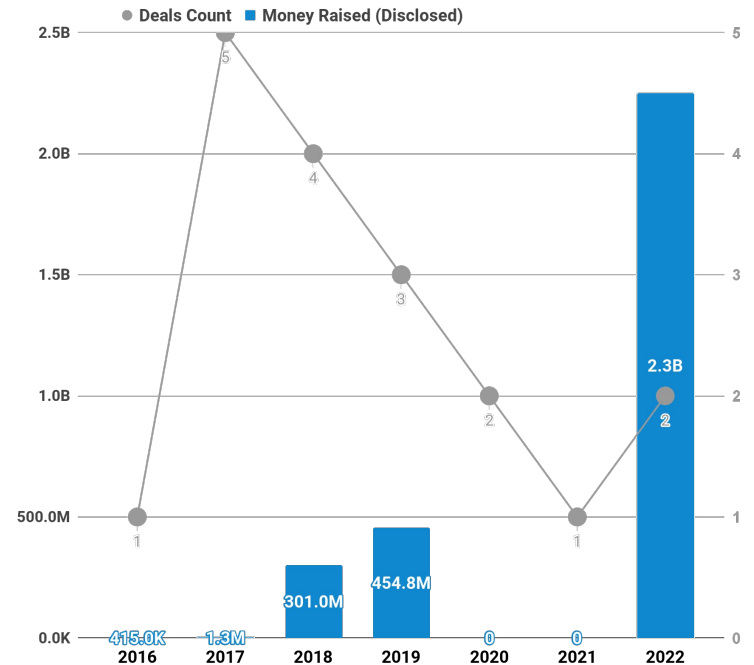


The IPO category is in the lead by funding status. Next are M&A and Early stage venture categories. The Early Stage Venture and Private Equity round out the list.

In terms of number of employees, most companies have 5001+ employees 60%, 20% of companies have 1001-5000 employees, 10% have 1-10 employees, and the smallest number of companies have 1-10 and 11-100 employees.

The record high of private funding of Longevity & Pension Risk Transfer has reached \$2.3B in woww over 2 investment deals. Data is collected for 40 companies.

Investment Dynamics in Longevity & Pension Risk Transfer



Longevity Risk Market

During upcoming years the Longevity risk will bring the challenges which require taking steps towards mitigating the adverse outcomes for the financial industry.

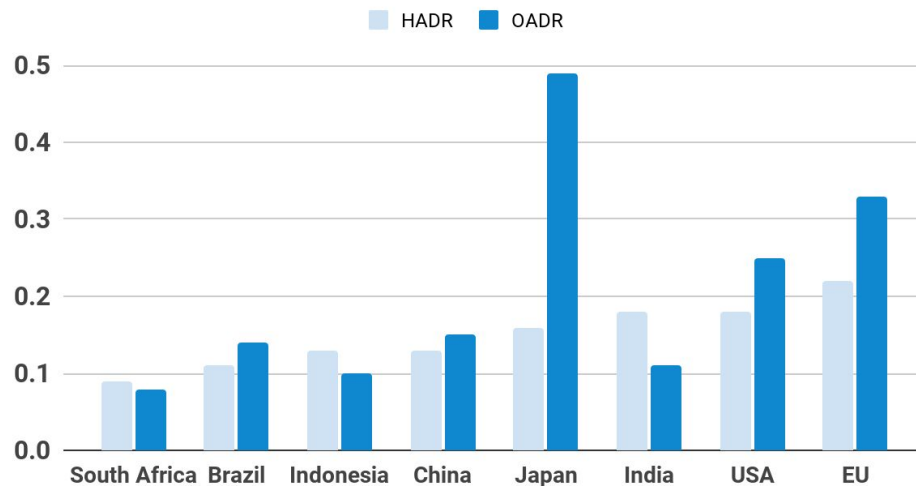
Each boomer has not “produced” enough children to replace themselves. Such leads to a decline in the number of taxpaying workers. It takes about 25 years to grow a new taxpayer.

The decline in economic prosperity is caused by excessive debt and declining income growth due to productivity increases.

Back in 1966, each employee in the USA shouldered \$555 of social benefits. Today, each employee has to support more than \$18,000 of benefits.

In the USA, by 2025, each married couple will pay Social Security retirement benefits for one retiree and their own family’s expenses.

Old-age dependency ratio (OADR) and health-adjusted dependency ratio (HADR) for selected countries*



HADR is a new measure of ageing burden based on the ageing-related health of the adult population compared to OADR widely used earlier. The comparison of the values of both metrics gives more clear understanding of how the particular countries overcome the negative consequences of ageing population and Longevity risk.

Longevity Risk Market

Fortunately, a more developed global value chain is already emerging for transferring Longevity risk from traditional holders of such risk – public and private pension funds – to a broader set of risk takers, including the capital markets.

At the inception of this value chain are the public and private retirement systems that are presently responsible for meeting the vast majority of retirement obligations. Public and private pension plan sponsors are not compensated for holding Longevity risk and, in some cases, are not particularly well suited to manage it, either.

Therefore, they are increasingly taking advantage of opportunities to shift liabilities off their balance sheets using a variety of transactions, called pension buy-ins, pension buy-outs and Longevity swaps (collectively, “pension risk transfer contracts”).

Fund / Sponsor	Provider(s)	Solution	Size	Date
Lloyds Banking Group pension schemes	Scottish Widows / SCOR	Longevity swap and reinsurance	£5.5B	Feb 2022
NN Life	Reinsurance Group of America	Longevity reinsurance	€4.0B	Dec 2021
Phoenix Group	Metlife	Longevity reinsurance covering UK pension liabilities	\$2.4B	Dec 2021
Unnamed UK pension	Zurich / Metlife	Longevity swap and reinsurance	\$3.5B	Dec 2021
Aegon	Reinsurance Group of America	Longevity reinsurance	€7.0B	Dec 2021
Athora Netherlands	Reinsurance Group of America	Longevity reinsurance	€3.3B	Sep 2021
ICL Group Pension Plan (Fujitsu)	Swiss Re	Longevity swap and reinsurance	£3.7B	May 2021
Unknown UK pension	Prudential Financial, Inc. and Zurich	Longevity swap and reinsurance	£6.0B	Mar 2021
Athora Netherlands	Canada Life Re	Longevity reinsurance	€4.7B	Mar 2021
AXA UK Pension Scheme	Hannover Re	Longevity swap	£3.0B	Mar 2021

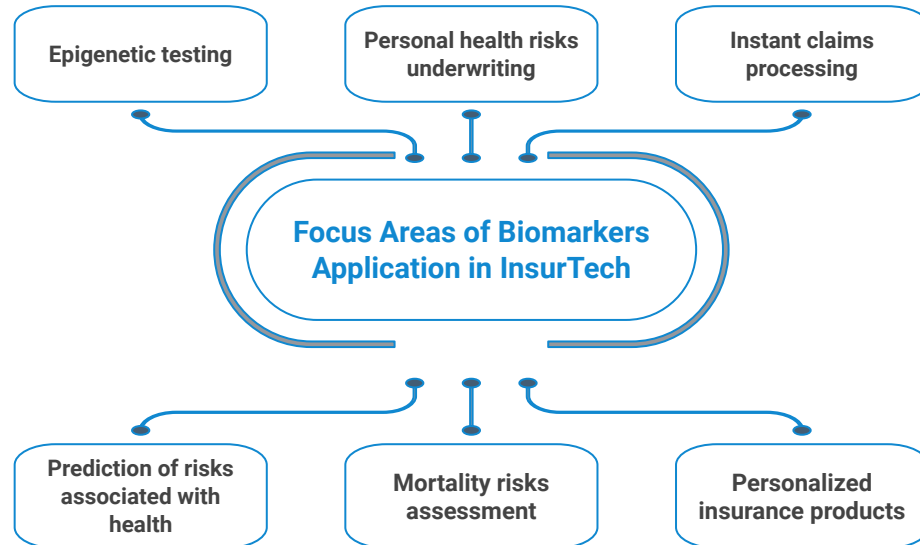
Longevity & Pension Risk Transfer Subsector

While the InsurTech sector is the leading example today of financial companies onboarding the practical application of Biomarkers of Longevity, it is just the start of a much larger trend that will involve the Financial Industry incorporating the use of Biomarkers of Human Longevity

The most recent trend shaping the InsurTech Industry is the measurement and analysis of epigenetic biomarkers. The epigenetic clock measures biological aging in a unique way. Studies have shown that individuals who have faster epigenetic clocks are aging faster biologically and, subsequently, are at greater risk for all-cause mortality. Epigenetic measurements also provide insights into how and why we age, making them an important new tool in longevity research.

Biomarkers possess an immense potential to bring greater efficiency into insurance industry. The market is set to witness the emergence of new solutions in upcoming future.

Many financial services and products can be optimized using biomarkers and, in particular, biomarkers of human longevity. Such approach show great value for a whole variety of entities, both governmental and privately held, providing optimized hedging solutions.



Takeaways



Longevity and Health InsurTech experience the exponential growth over the last few years both in terms of secured record amounts of private funding and the number of exits. InsurTechs are poised to be a game changer for customers willing to live longer and secured life and insurance companies aiming to find effective solutions to mitigate the adverse effects of Longevity risks. Longevity InsurTech will continue to evolve partially due to the outcomes of the COVID-19 pandemic and the wider application of frontier technologies (e.g. AI, Machine Learning and Big Data) able to revolutionize the existing approaches across the insurance industry.



Commercial InsurTech remains primed for significant growth in the next few years, the market is expected to be “ripe for partnerships. InsurTech companies in commercial insurance, like in other segments, were once intent on competing directly with incumbent insurance companies, but today’s players are often focused on partnerships. Insurers that once felt threatened by InsurTech companies are now willing to invest in and ally with firms that can help them deliver innovative insurance products to the market quickly and efficiently.



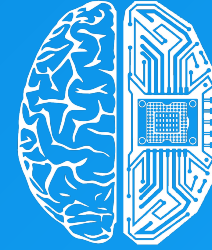
Life InsurTech is embracing the advanced technologies to deliver the customised solutions to clients on the one hand, and to improve the risk underwriting approached of insurance companies. As the cycle of maturation of the insurtech sector continues, underequipped insurers will either lose market share or adapt high-cost point solutions to access and manage new channels. This will result in great industry development as fewer technical contenders drop out of the race - or embrace new business practices. Life InsurTech will bring to market “wrapped” products that adjust coverage based on the evolving needs of customers.



Property & Casualty InsurTech must respond to economic conditions and evolving customer preferences by transforming operations and embracing new ways of working. To adapt, retail and commercial insurers must rethink their value propositions and improve the customer journey by offering more personalized products and reinventing distribution; operate efficiently to minimize costs and maximize margins; form new partnership ecosystems; adopt digitization—including artificial intelligence (AI), smart operations, and advanced analytics.



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