

# INVESTMENT DIGEST

Longevity Financial Institutions Q3 2021

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## Longevity Financial Institutions Investment Digest at a Glance

This Investment Digest summarizes key observations in the Financial Institutions that engage in the Longevity Industry. We define the Longevity Industry as a combination of aging, advanced preventive precision biomedicine, AgeTech, relevant parts of national healthcare budgets, and the global financial industry related to such sub-industries. In the digest, we have assembled information about **top 300 Financial Institutions** representing five main financial institution types: **Asset Management Firms, Banks, Pension Funds, Insurance, and Reinsurance firms**. We have highlighted the biggest deals lead or co-led by top 300 Financial Institutions that have helped the Longevity Industry's smooth performance.

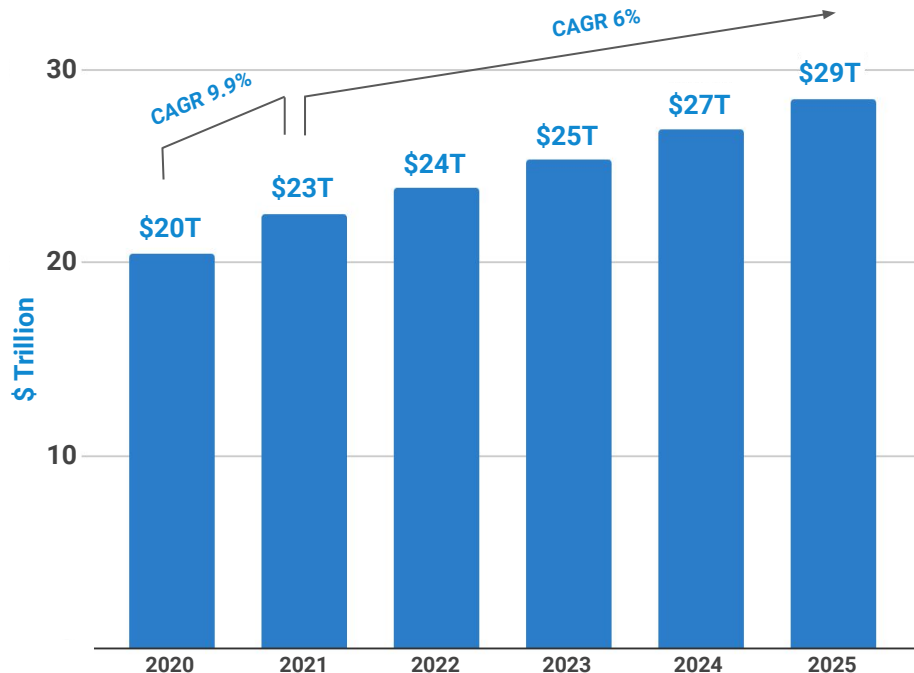
The COVID-19 pandemic has jeopardized the Financial Institutions' overall performance. Still, it has boosted the growth of the biotech capital market and the development of the longevity sector, resulting in more than **30%** by year. Thus, the activity between Financial Institutions and Longevity Industry has increased significantly.

To sum up, Financial Institutions are among the key players in the industry, and this digest provides the critical insights into the performance and interaction of Financial Institutions with the Longevity Industry.



# FINANCIAL INDUSTRY OVERVIEW

Global Financial Services Market Volume Forecast



**Longevity** is the current focus of the largest financial institutions all over the world. Investors seek opportunities to contribute to the development of the Longevity industry by investing in AgeTech, Longevity Fintech, Longevity Biomedical companies, and startups.

Aging not only becomes a trending theme highlighting the most acute problems of our time - It also presents one of **the most promising opportunities**.

Financial institutions that will adapt their business models to the new industries of AgeTech, WealthTech, and Longevity Finance will have a chance to outperform their competitors and grow rapidly. **A high-quality analysis of longevity will bring this to reality.**

We define five categories of companies that contribute to the development of the Longevity Financial Institutions industry. Such categories are Asset Management Firms, Banks, Insurance, Reinsurance Companies, and Pension Funds. We expect that market will grow at an average rate of **6%** during the following years reaching **\$29 trillion by 2025**.

# TOP 300 FINANCIAL INSTITUTIONS ADVANCING THE LONGEVITY INDUSTRY

## 105 Asset Management Firms



## 75 Banks



## 55 Insurance Companies



## 20 Reinsurance Companies



## 45 Pension Funds



# TOP 20 FINANCIAL INSTITUTIONS ADVANCING THE LONGEVITY INDUSTRY BY REGION



## Jiangsu



China Construction Bank  
Beijing, Jiangsu, China



Agricultural Bank of China  
Beijing, Jiangsu, China



Bank of China  
Beijing, Jiangsu, China



China life  
Beijing, Jiangsu, China

## Guangdong



China Merchants Bank  
Futian, Guangdong, China



Ping An Insurance  
Futian, Guangdong, China

## Hong Kong



AIA Group  
Central, Hong Kong, China



## New South Wales



Commonwealth Bank of  
Australia  
Sydney, New South Wales, Australia



## Cambridgeshire



AstraZeneca Pension Fund  
Cambridge, Cambridgeshire, UK

## Greater London



HSBC  
London, Greater London, UK



## Ontario



Royal Bank of Canada  
Toronto, Ontario, Canada



Toronto-Dominion Bank  
Toronto, Ontario, Canada



## Nebraska



Berkshire Hathaway  
Omaha, Nebraska, US

## North Carolina



Bank of America  
Charlotte, North Carolina, US

## New York



JPMorgan Chase  
New York City, New York, US



American Express  
New York City, New York, US



Citygroup  
New York City, New York, US



Goldman Sachs Group Inc.  
New York City, New York, US



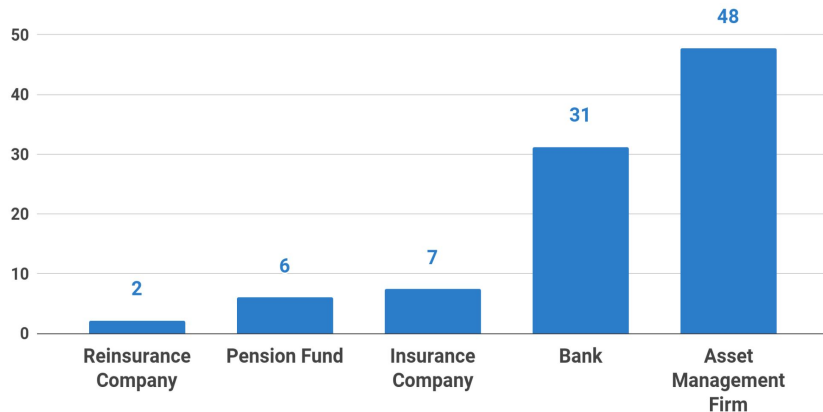
Wells Fargo & Co.  
New York City, New York, US



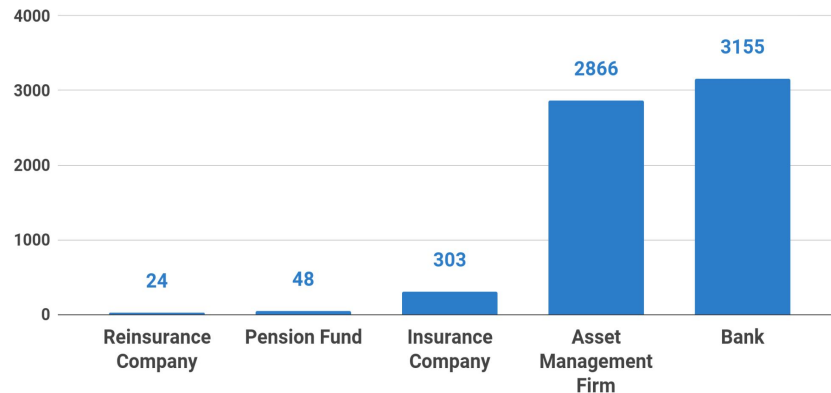
Morgan Stanley  
New York City, New York, US

# OVERALL FINANCIAL INSTITUTIONS INVESTMENTS UP TO 2021

## Average Number of Funding Rounds per Institution



## Number of Funding Rounds



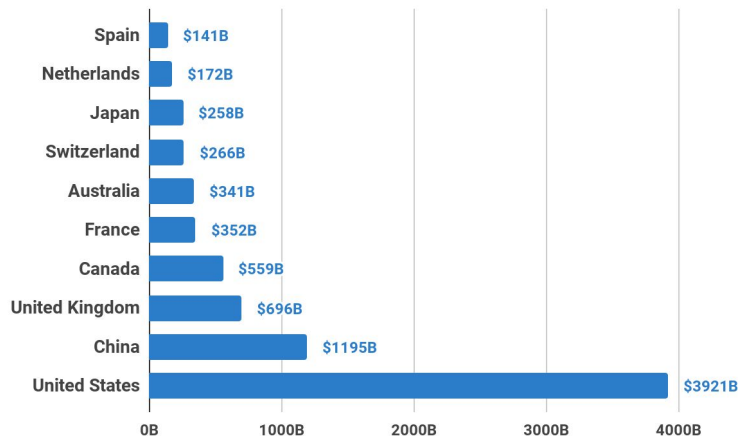
**Total Number of Investments by Financial Institutions: 6396**

**Asset Management Firms** take a clear lead by the number of investments per institution. Such tendency is explained by the nature of **Asset Management Firms** and their investment strategies. **Banks** take the second position as the most well-known financial sources. However, due to stricter rules and regulations, the amount of investment projects per institution is 35% less than **Asset Management**.

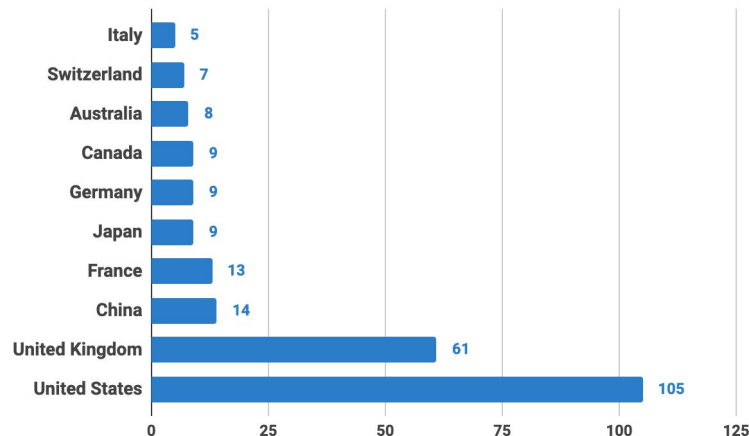
**Reinsurance Companies, Pension Funds, and Insurance Companies** are responsible only for **1.1%** of all investments among the five mentioned types of Financial Institutions. However, these types of institutions face retirement-related liabilities that increase as a result of improved life expectancy. Thus, it's essential for them to develop customised longevity products and services. The market is yet to see the biomarkers-tied financial instruments, advanced pension schemes, flexible annuity concepts and insurance plans.

# TOP COUNTRIES ENGAGED IN THE LONGEVITY SECTOR IN 2021

## Total Market Capitalization of Longevity Financial Institutions by Country



## Number of Longevity Financial Institutions



The chart on the left represents the top 10 countries by total market capitalization of financial institutions. The chart on the right depicts the top 10 countries by number of financial institutions. The **United States** takes the lead on both charts with most financial institutions and most total market capitalization. However, in terms gross value added of finance sector in total economy US ranked 5th after Luxemburg, Hong Kong, Singapore, and Switzerland. **China** has four times fewer financial institutions than **The United Kingdom**, yet those financial institutions have a double market capitalization of the United Kingdom financial institutions. Countries like **Australia, Canada** occupy lower positions by the number of financial institutions but are placed higher on the chart by total market capitalization of these financial institutions.

# FINANCIAL SERVICES COMPANY TYPES

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## Overview



InvestTech  
Advanced  
Solutions



# TYPES OF FINANCIAL SERVICES COMPANIES

## Banking

A Bank is a financial institution which accepts money from the public for the purpose of lending or investment repayable on demand or otherwise withdrawable by cheques, drafts or order or otherwise. Banks are intermediaries in most financial transactions. Commercial banks offer services to private individuals and businesses, while retail banks deal with individuals and families.

## Asset management

Asset management (AM) companies accumulate capital from various individual and institutional investors and make fundings on their behalf. AM firms invest in various assets, including equity, debt securities, real estate, and others. Pursuing high returns, AMCs use state-of-the-art software and hardware for efficient asset allocation and asset management.

## Insurance

Insurance is a relationship between an individual or a legal entity on the one hand and an insurer on the other, where the first receives financial protection against undesirable events that may occur and cause damage to health or property in exchange for fixed payments to the insuring organization.

## Reinsurance

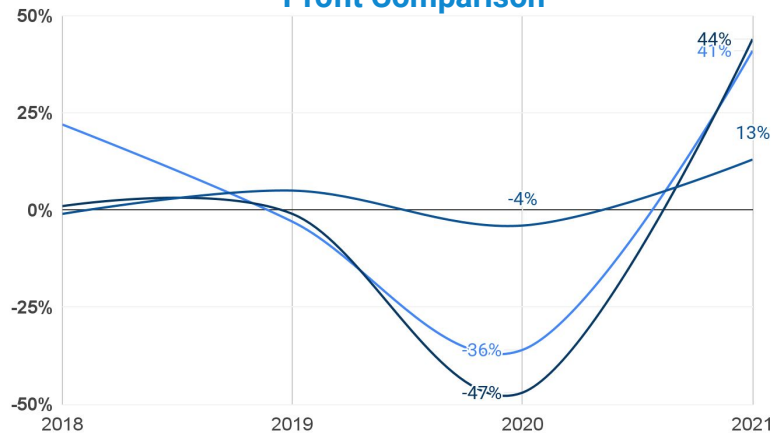
Reinsurance companies cover all or a part of an insurer's risk in case of a substantial payment for an insurance claim. This cooperation provides greater protection of the insurer's equity. Reinsurance companies receive a premium for the risk they cover.

## Pension funds

Pension funds are investment pools that are formed from employee's payments for their retirement. There are two types of pension funds. A Defined Benefit Fund pays a fixed amount to the beneficiary, while the payments of a Defined Contribution Plan depend on how well the fund performs on capital markets.

# BANKING INDUSTRY OUTLOOK

Profit Comparison



Source: Accenture, as of 25 March 2021

CAGR for revenue scenarios, 2019–2024

Regions	Quick Recovery (%)	Slow Recovery (%)	Long Recovery (%)
Western Europe	0.6	-0.9	-3.0
North America	1.1	-0.4	-2.5
Eastern Europe	4.1	2.2	0.1
Middle East & Africa	2.5	0.8	-1.1
Latin America	3.7	1.7	-0.4
Asia-Pacific	4.9	2.9	0.6

Source: BCG's banking pools

Although COVID has not been a solvency event for the banking industry, we have seen material profit compression that has reordered banks' priorities. Leading institutions have witnessed double-digit net income declines of **7%** in Asia-Pacific, **37%** in North America and **51%** in Europe in 2020.

**50%** of banking customers worldwide now use a mobile app or website to connect at least weekly with their bank, up from **32%** prior to the pandemic. In the developed world, digital penetration has now settled at a level typically above **70%** after a surge in 2020.

It will take several years to return to the usual business activities that can be seen before Covid-19.

Estimated that **\$2 to \$5 trillion** of potential aggregate revenue will be lost over the next four years. Depending on the future pandemic situation, there are three possible global recovery scenarios: **quick recovery** (1-2 years), **slow recovery** (2-3 years), and **prolonged recovery** (3-4 years).

The steepest revenue declines are expected in North America and Western Europe. Eastern Europe and the Asia-Pacific economic region are expected to grow in any scenario.



# AGE FRIENDLY BANKS

The financial institutions, namely banks address their increasing attention to opportunities of transforming into AgeTech-Longevity financial institutions.

The primary goal of these change lies in simplifying banking for people over 60. As the share of seniors is increasing, the conventional banks are lagging behind in finding solutions for this age group, especially taking into account the fact that seniors are holding the lion's share of the savings. Traditional banks, as opposed to challenger banks, are making their first steps in AgeTech, adapting their infrastructure for the elderly.

This adapting is an ultimate goal for resolving the challenges the seniors deal with while obtaining banking services.

## Age-friendly Banking Agenda

**Financial scams**

**Accessibility of  
banks' branches**

**Quality of call  
handling systems**

**Issues of 'passing  
security'**

**The demand for  
carer banking**

**Blanket age  
restrictions on  
financial products**

Standard banking products do not always meet the needs of older, especially low- and middle-income adults. Effective banking products that are tailored to the needs of older adults are key to ensuring their ability to remain independent and financially secure.

### Retirement Planning

Assisting older adults in planning for longevity and retirement has become a widely offered service as well as assisting families and caregivers with managing an elder's finances is a good initiative in an age-friendly approach.

### Targeted Checking Accounts

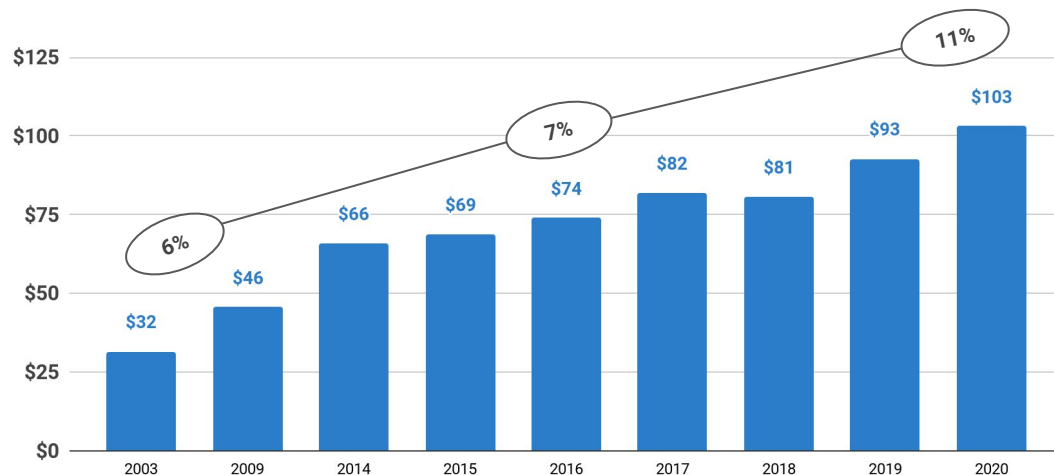
Another innovation in financial services to help older adults manage their accounts and protect their exploitation is the use of "View-Only" accounts, which gives to refrain from using alternative banking.

### Training

Understanding the financial needs of older adults and the barriers they face in managing their finances is crucial to designing products that ensure financial security for older adults.

# ASSET MANAGEMENT INDUSTRY OVERVIEW

Global Assets Under Management, trillions USD



Source: BCG, Global Asset Management 2021

According to BCG, the asset management industry has emerged from the global pandemic in a position of strong, with assets growing by **11%** in 2020 to end the year at **\$103 trillion**. Retail portfolios, representing **41%** of global assets at **\$42 trillion**, grew by **11%** in 2020, while institutional investments grew at a similar pace to reach **\$61 trillion**, or **59%** of the global market.

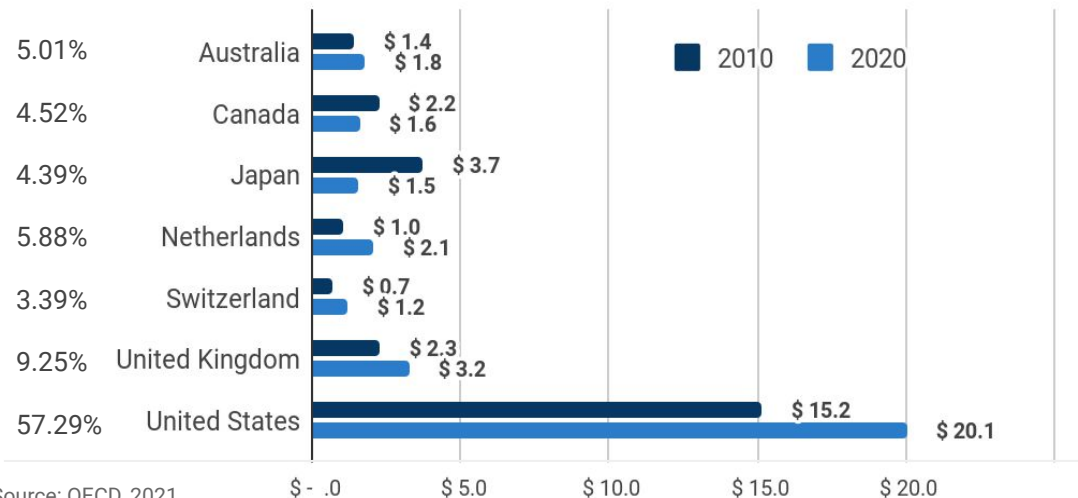
**We identify the following key trends in the Asset Management industry for the next few years starting from 2022:**

- Focus on investment in digital technology
- Industry consolidation through mergers and acquisitions
- Artificial Intelligence
- Exploration into FinTech partnerships
- Cost optimization

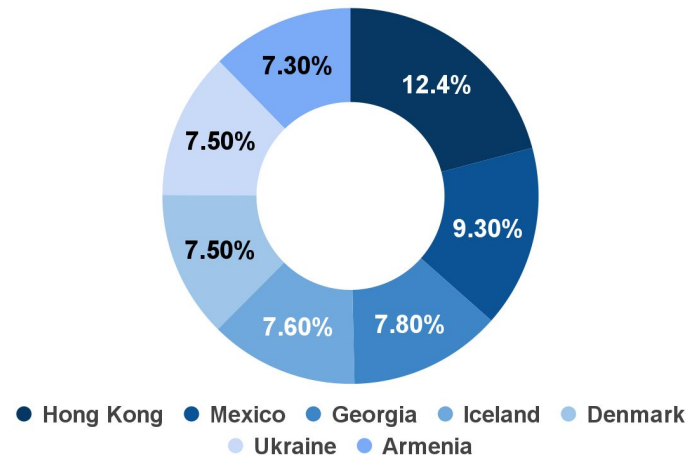
# GLOBAL PENSION FUNDS INDUSTRY OUTLOOK

Market Share, %

Assets Geographic Distribution, (Billion)

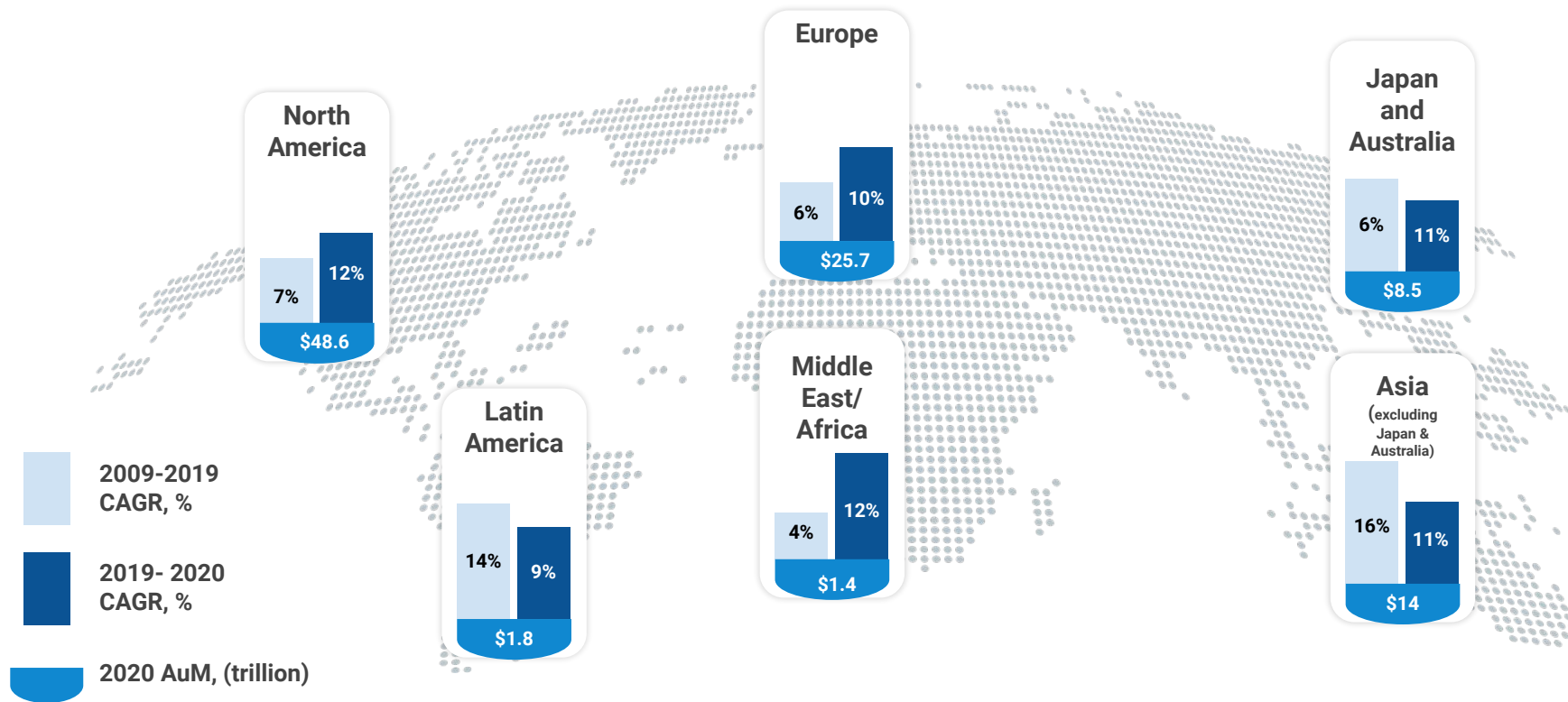


Real Investment Rates of Return of Pension Funds, %



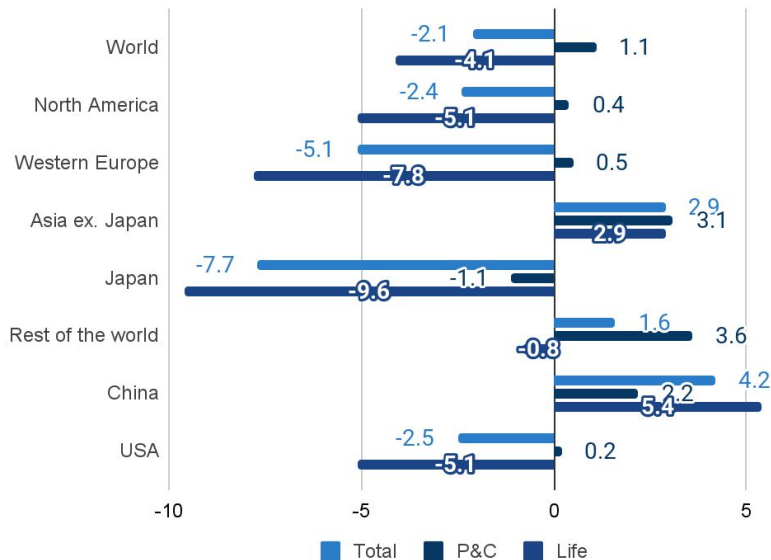
The US is the largest pension market accounting for **57.29%** of the global pension market, according to 2020 figures. Pension fund assets exceeded **\$35 trillion** at the end-2020. Equities and bonds accounted for nearly **75%** of pension fund investments on average at end-2020. Pension fund assets continued to rise in 2020 in almost all countries. This increase was supported by capital gains in financial markets and government measures that helped members to continue participating in their pension plans. Pension funds in Hong Kong (China) and Mexico experienced the highest investment performance in 2020, at **12.4%** and **9.3%** respectively.

# GLOBAL AUM BY REGION



# INSURANCE INDUSTRY OVERVIEW

## Gross Written Premium Growth, 2020 by Region (in %)



Source: Allianz Insurance Report, 2021

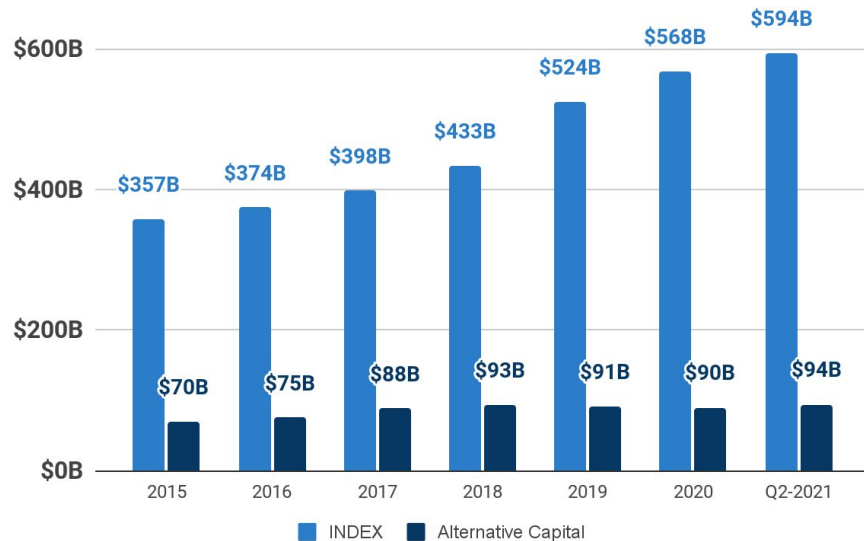
2020 was the year of the virus: Covid-19 destroyed countless lives and economic livelihoods; the global economy plunged into its worst recession since World War II. And the insurance industry was also caught in this downward spiral.

Insurance companies seem to have experienced a slowdown in gross premiums written, especially in the life sector. On average, non-life insurance premiums grew by **1.2%** in 2020 while life insurance premiums declined by **2.2%**.

Mirroring the global economic development, strong growth is expected for the insurance sector in 2021: total global premiums will rise by **+5.1%**. Unsurprisingly, the US (**+4.3%**) and China (**+10.4%**) are likely to be the two growth engines. However, like the pandemic-related slump, the recovery will be very uneven. While some regions will almost seamlessly resume their pre-crisis development as early as 2021, the recovery in developing countries will be much more uncertain. Western Europe will be the laggard, with total premium income up by only **+1.2%**.

# REINSURANCE INDUSTRY OVERVIEW

## Global Reinsurer Capital



Source: Willis Re, September 2021

Analysts at Fitch Ratings are forecasting significant improvements in reinsurers' financial performances next year due to higher prices in a hardening market, a strong rebound in economic activity and lower pandemic-related losses.

According to Willis Re's data, global reinsurers performed well in the first half of 2021, with a further expansion of their capital base and strong headline underwriting results and **ROEs**. Underlying ROEs, while less strong, were nonetheless noticeably improved.

Global reinsurance dedicated capital totalled **\$688 billion** at the end of the first half, up **4%** on the restated 2021 base. Growth came both from the INDEX companies and alternative capital.

Focusing on the INDEX companies, which contribute over **80%** of the industry's capital: the INDEX companies achieved a **5%** increase in capital.

# PUBLICLY TRADED LONGEVITY-FOCUSED FINANCIAL INSTITUTIONS

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## Overview



# FINANCIAL INSTITUTIONS ADVANCING THE LONGEVITY INDUSTRY

## Cumulative Capitalization Dynamics in 2020-2021, Trillion USD



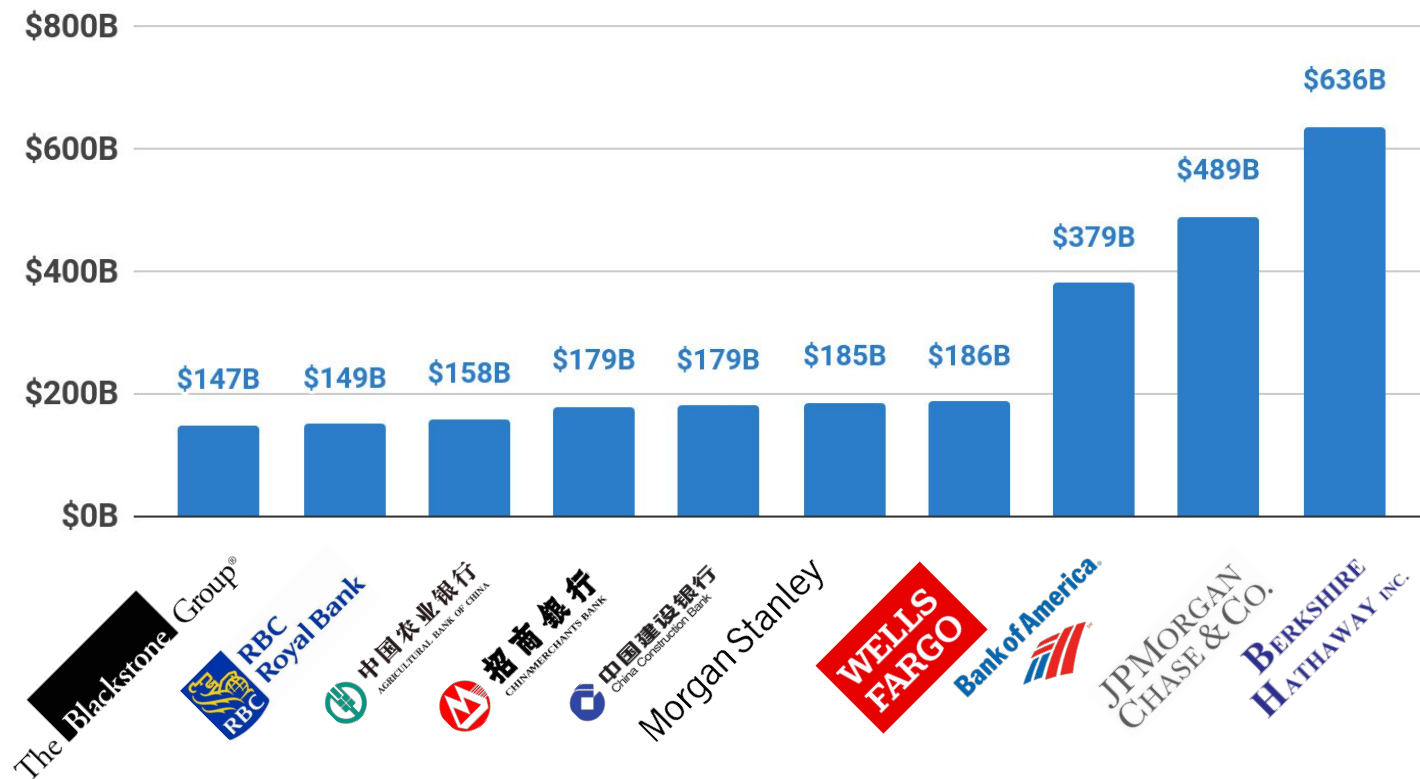
Since Q1 2020 market downturn, **194** financial institutions have fully recovered by year-end and continued to grow in 2021. The chart represents the cumulative capitalization dynamics of financial corporations that either have initiatives related to the Longevity Industry or already adjust their strategies to the challenges of ageing population.

As of the end of Q3 2021, the cumulative capitalization of such financial institutions has reached **\$8.92T**.

The largest institutions by market capitalization are **Berkshire Hathaway, JPMorgan Chase & Co., Bank of America, and Wells Fargo & Co.**



# TOP 10 FINANCIAL INSTITUTIONS IN 2021 (BY MARKET CAPITALIZATION)



# TOP 20 FINANCIAL INSTITUTIONS BY STOCK EXCHANGE

## NYSE



### US-Based



**Berkshire Hathaway (BRK-B)**  
Market Cap: \$642B



**JPMorgan Chase & Co. (JPM)**  
Market Cap: \$453B



**Bank of America Corp. (BAC)**  
Market Cap: \$322B



**American Express (AXP)**  
Market Cap: \$137B



**The Blackstone Group (BX)**  
Market Cap: \$138B



**Citigroup (C)**  
Market Cap: \$141B



**Goldman Sachs Group Inc. (GS)**  
Market Cap: \$133B



**Wells Fargo & Co. (WFC)**  
Market Cap: \$185B



**Morgan Stanley (MS)**  
Market Cap: \$177B



### Canada-Based



**Royal Bank of Canada (RY)**  
Market Cap: \$143B



**Toronto-Dominion Bank (TD)**  
Market Cap: \$120B



### UK-Based



**HSBC Holdings (HSBC)**  
Market Cap: \$113B

## Australia (ASX)



### Australia-Based



**Commonwealth Bank of Australia (CBA)**  
Market Cap: \$130B

## China (SSE)



### China-Based



**Ping An Insurance (PENGAY)**  
Market Cap: \$148B



**Agricultural Bank of China (ACGBY)**  
Market Cap: \$158B

## Hong Kong (HKEX)



### China-Based



**China Construction Bank (CHICHY)**  
Market Cap: \$179B



**China Merchants Bank (CIHKY)**  
Market Cap: \$183B



**Bank of China (BACHY)**  
Market Cap: \$130B

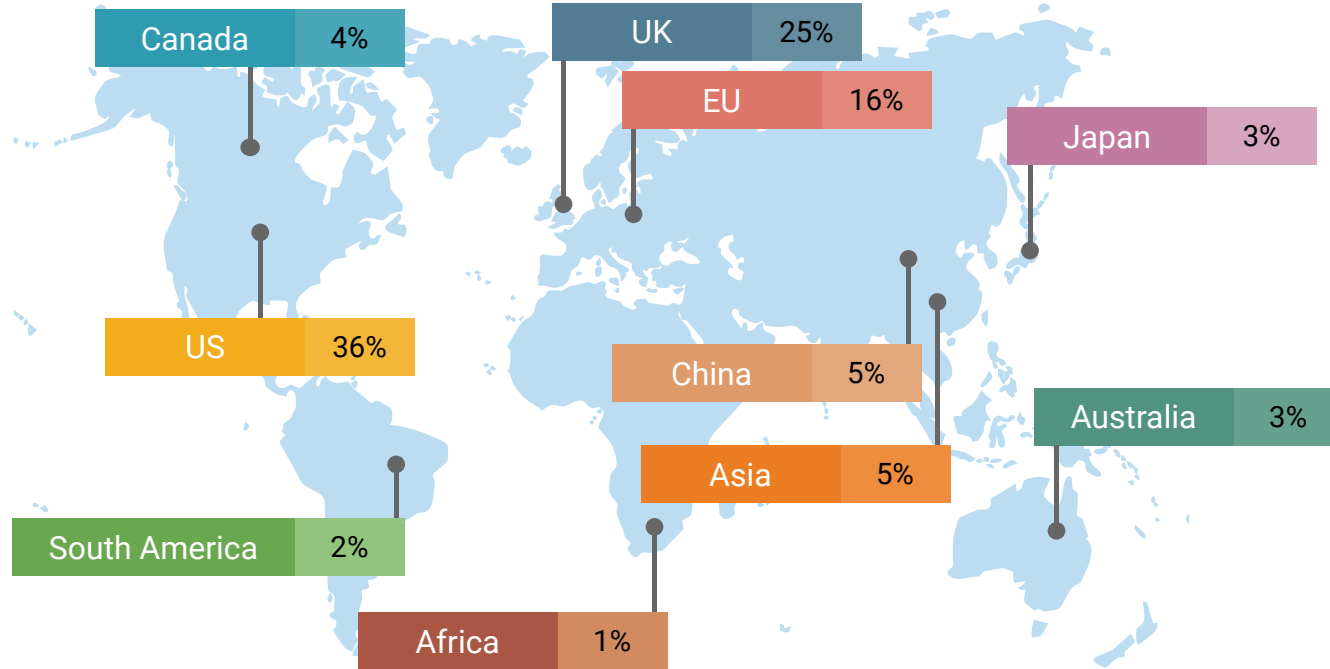


**AIA Group (AAGIY)**  
Market Cap: \$138B



**China Life Insurance (LFC)**  
Market Cap: \$103B

# 300 FINANCIAL INSTITUTIONS: REGIONAL PROPORTION



The chart represents the distribution of longevity-focused financial institutions by country. On the one hand, the largest number of the selected companies have their headquarters in the US because of the high availability of developed financial markets. On the other hand, quite a few companies are headquartered in the UK and the EU for a similar reason.

# LONGEVITY-FOCUSED FINANCIAL INSTITUTIONS: MARKET INDICES

Our Financial Institutions Index includes **179** longevity-focused corporations operating in the financial sector.

The index exhibits the returns close to the S&P 500 index.

While the volatility of such a longevity-focused index is lower compared to the Nasdaq index, the distribution of its returns is more right-skewed, which differentiates it from the vast majority of stock indices. That means that the extraordinary positive events are more likely to happen in longevity sector compared to other market segments.

The distribution of longevity-focused financial institutions stock returns cannot be referred to as normal but it is close to normal (kurtosis 0.93).

Index	Correlation with Financial Institution index	Avg. daily return in 2021 - Q3 2021	Avg. daily volatility in 2021 - Q3 2021	Skewness	Kurtosis
Financial Institutions Index	-	0.086	0.82	-0.35	0.93
S&P 500	0.57	0.102	0.80	-0.41	0.96
Nasdaq Bank Index	0.79	0.179	1.70	0.32	1.37
SSE Composite Index	0.29	0.009	0.93	-0.24	0.25



# LONGEVITY FINANCE INDEX VS. OTHER INDICES

It's essential to measure the performance of longevity-focused financial institutions via the comparison of main market benchmarks:

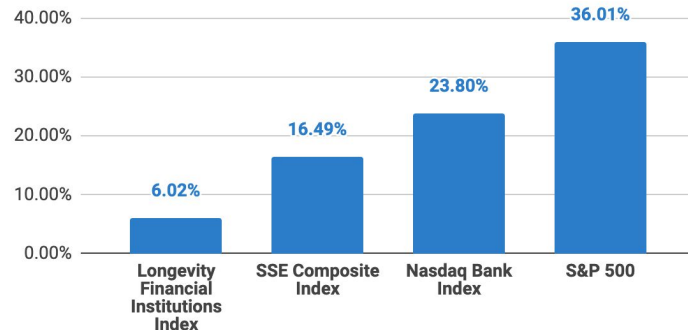
- S&P 500
- NASDAQ Bank Index
- SSE Composite Index

These indices are compared to the Longevity Financial Institutions Index consisting of 179 longevity-focused corporations operating in the financial sector.

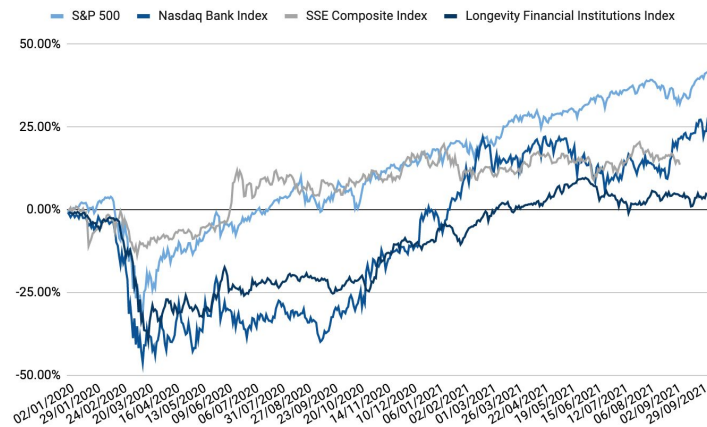
The charts represent the returns performance of four abovementioned benchmarks during 2020 - Q3 2021. The right chart above describes the growth over time when comparing the beginning of 2020 and the end of Q3 2021. The chart to the right below outlines the dynamics of returns over the same period.

The Longevity Financial Institutions Index shows 6.02% growth within the covered period that are relatively lower than other benchmarks. However, judging from the average daily returns mentioned earlier, the Longevity Financial Institutions Index shows the robust daily returns values.

## Growth of Indices over 2020-Q3 2021



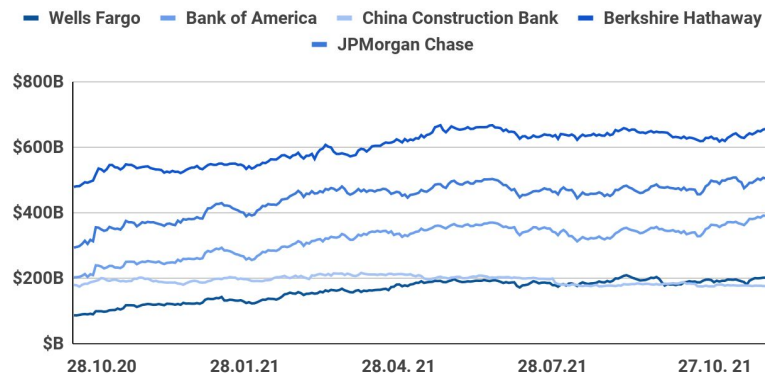
## Longevity Financial Institutions Index & Major Market Benchmarks Returns Performance



# BIGGEST FINANCIAL INSTITUTIONS ACROSS THE LONGEVITY INDUSTRY

Four out of five financial institutions having the highest market capitalization which advance the Longevity Industry are represented by banks. Nevertheless, the first place is taken by Berkshire Hathaway's asset management firm. Judging the financial results in 2021, this year is set to link between recovering from COVID-19's impact and transforming financial services to power success in the years ahead.

## Capitalization Change in 2020/2021



Name	Country	Market Cap, USD	Annual Revenue (3Q)	Net Income	Volume	Total Return (Year-to-Year)	ROE (3Q)	ROA	PE Ratio	Beta (5Y)
Berkshire Hathaway	USA	653.8B	261.1B	105.8B	4.6M	45.1%	24.4%	10.0%	6.4	0.91
JPMorgan Chase & Co.	USA	452.6B	131.2B	48.3B	10.4M	56.5%	17.9%	1.4%	10.1	1.14
Bank of America Corp.	USA	398.5B	91.2B	28.9B	45.7M	57.9%	11.2%	1.0%	12.8	1.54
Wells Fargo & Company	USA	210.4B	78.2B	17.5B	26.5M	79.1%	10.8%	1.0%	12.3	1.33
China Construction Bank	China	171.0B	618.2B	291.8B	117.6K	-3.9%	12.2%	1.0%	4.2	0.65

# BERKSHIRE HATHAWAY INC.

BERKSHIRE  
HATHAWAY INC.

**Berkshire Hathaway**, Inc. engages in the provision of property and casualty insurance and reinsurance, utilities and energy, freight rail transportation, finance, manufacturing, and retailing services.

The company's revenue structure is as follows:  
**The Insurance** segment consists of private passenger automobile insurance, multiple lines of property and casualty insurance policies for primarily commercial accounts, excess-of-loss and quota-share and facultative reinsurance.

**The BNSF** segment operates railroad systems in North America.

**The BH Energy** segments deals with regulated electric and gas utility.

**The Manufacturing** segment includes industrial products.

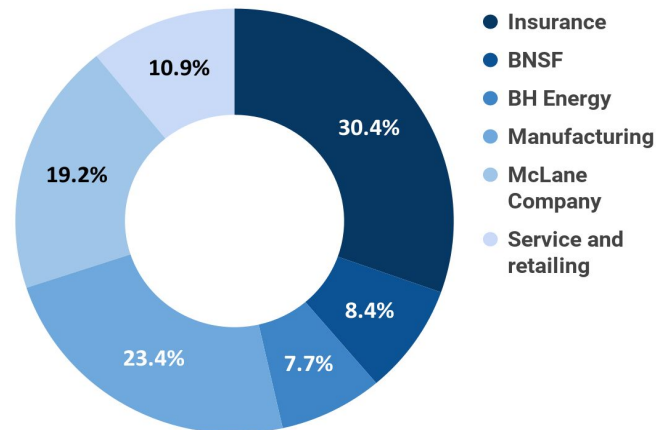
**The McLane Company** segment offers wholesale distribution of groceries and non-food items.

**The Service and Retailing** segment mainly provides fractional aircraft ownership programs and aviation pilot training.

Stock Price



Revenue Structure, Interim 2021



Ticker	Volume (M)	Capitalization (\$B)	Growth Rate (%)	Beta (1Y)
BRK.B	4.6	655.9	33.5	0.91

**JPMorgan Chase & Co.** is a global financial services provider operating in four segments: Consumer & Community Banking (**CCB**), Corporate & Investment Bank (**CIB**), Commercial Banking (**CB**), and Asset & Wealth Management (**AWM**). It offers a wide range of investment banking products and services in all capital markets, including advising on corporate strategy and structure, capital raising in equity and debt markets, risk management, market making in cash securities and derivative instruments, and brokerage and research.

The company's revenue structure looks as follows:

**The CCB** segment offers lending, deposit, and cash management and payment solutions to small businesses.

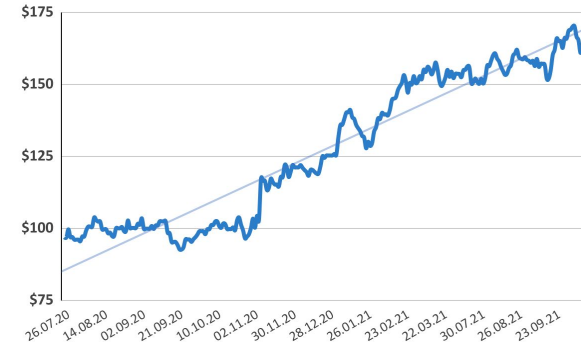
**The CIB** segment provides investment banking products and services.

**The CB** segment provides financial solutions to small business, large and medium-sized corporations, local governments, and non-profit clients.

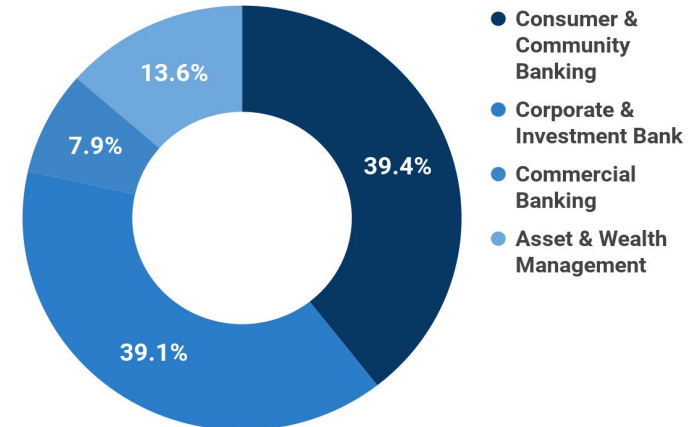
**The AWM** segment offers multi-asset investment management solutions to institutional clients and retail investors.

Ticker	Volume (M)	Capitalization (\$B)	Growth Rate (%)	Beta (1Y)
JPM	14.2	452.6	66.5	1.17

Stock Price



Revenue Structure, Q3 2021





# BANK OF AMERICA CORPORATION

**Bank of America Corporation** operates through the following segments: Consumer Banking, Global Wealth and Investment Management, Global Banking, Global Markets, and All Other. It provides banking and financial products and services for individual consumers, small and middle-market businesses, institutional investors, large corporations, and governments worldwide.

The company's revenue structure is as follows:

**The Consumer Banking** segment provides credit, banking, and investment products and services to consumers and small businesses.

**The company's Global Wealth & Investment Management** segment provides investment management, brokerage, banking, and trust and retirement products and services.

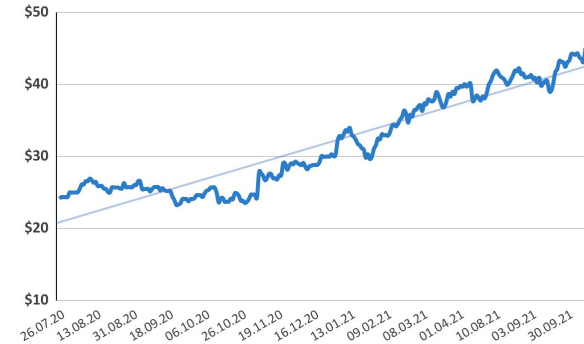
**The Global Banking** segment provides lending products and services.

**The Global Markets** segment provides market making, financing, securities clearing, settlement, and custody services.

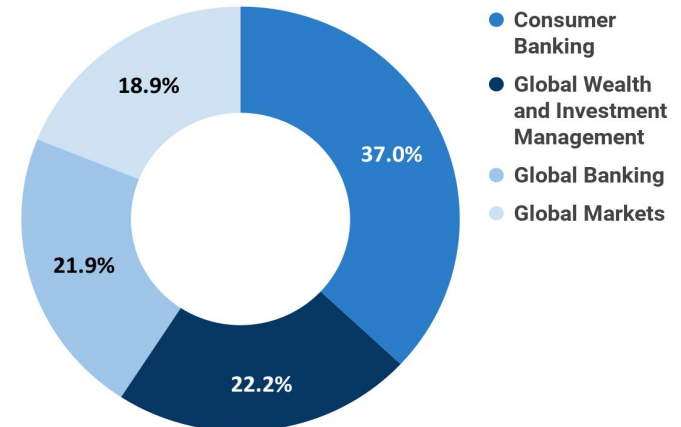
Ticker	Volume (M)	Capitalization (\$B)	Growth Rate (%)	Beta (1Y)
BAC	45.2	322.3	90.8	1.53

**BANK OF AMERICA** 

## Stock Price



## Revenue Structure, Q3 2021



**Wells Fargo & Company** provides a diversified set of banking, investment and mortgage products and services, as well as consumer and commercial finance, through four reportable operating segments.

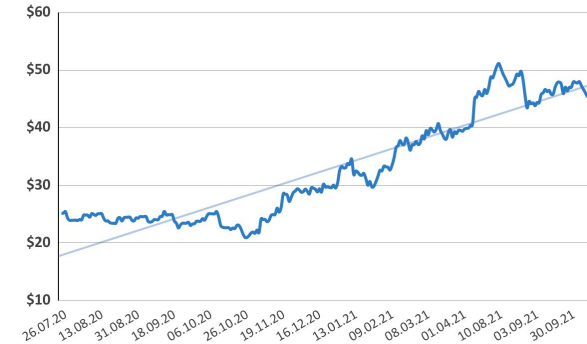
The company's revenue structure is as follows:  
**Consumer Banking and Lending** offers diversified financial products and services for consumers and small businesses with annual sales generally up to \$5 million.

**Commercial Banking** segment provides financial solutions to private, family owned and certain public companies.

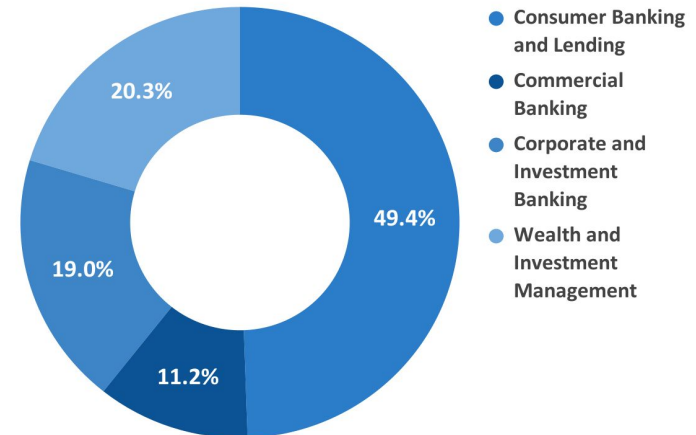
**Corporate and Investment Banking** segment delivers a suite of capital markets, banking and financial products and services to corporate, commercial real estate, government and institutional clients globally.

**Wealth and Investment Management** segment provides personalized wealth management, investment and retirement products and services to clients across U.S.-based businesses.

## Stock Price



## Revenue Structure, Q3 2021



Ticker	Volume (M)	Capitalization (\$B)	Growth Rate (%)	Beta (1Y)
WFC	27.0	185.4	95.1	1.35

# CHINA CONSTRUCTION BANK CORPORATION



中国建设银行

**China Construction Bank Corp.** engages in the provision of a wide range of financial services to corporate and non-corporate customers. It operates through the following business segments: Corporate Banking, Personal Banking, Treasury, and Others.

The company's operating income is as follows:

**The Corporate Banking** segment provides a range of financial products and services to corporations, government agencies and financial institutions.

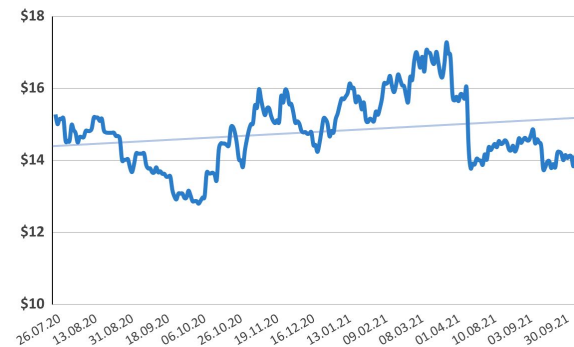
**The Personal Banking** segment provides personal loans, deposit taking and wealth-management services, card business, remittance services, and agency services to individual customers.

**The Treasury** segment engages in inter-bank money market transactions, repurchase and resale transactions, investments in debt securities, and trade of derivatives and foreign currency.

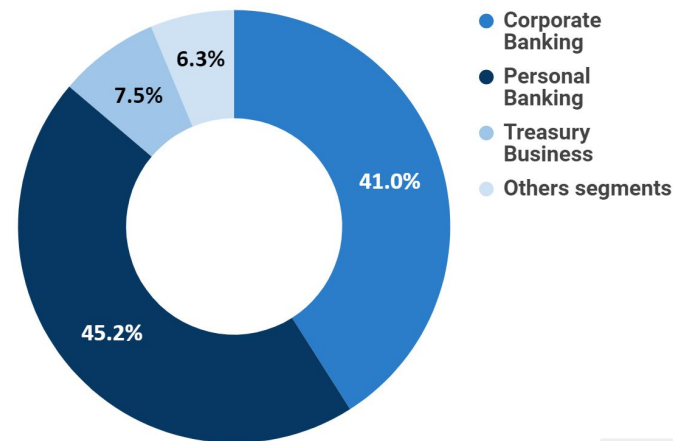
**The Other** segment refers to equity investments and revenues, results, assets and liabilities of overseas branches and subsidiaries.

Ticker	Volume (K)	Capitalization (\$B)	Growth Rate (%)	Beta (1Y)
CICHY	86.2	179.4	3.8	0.65

Stock Price



Revenue Structure, Interim 2021



**Industrial and Commercial Bank of China Ltd (ICBC)** engages in the provision of commercial banking and financial services. It operates through the following business segment: Corporate Banking, Personal Banking, Treasury Operations, and others.

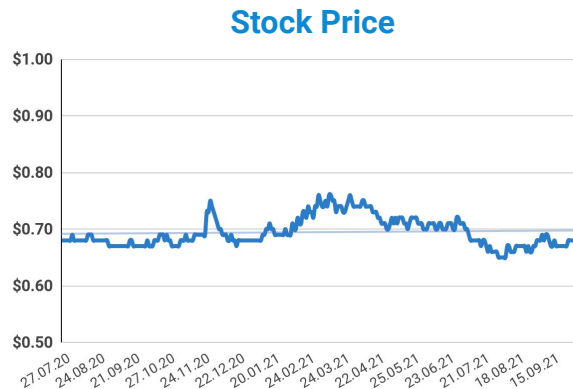
The company's operating income is as follows:

**The Corporate Banking** provides corporate loans, trade financing, deposit-taking activities, corporate wealth management services, custody activities, and various corporate intermediary services.

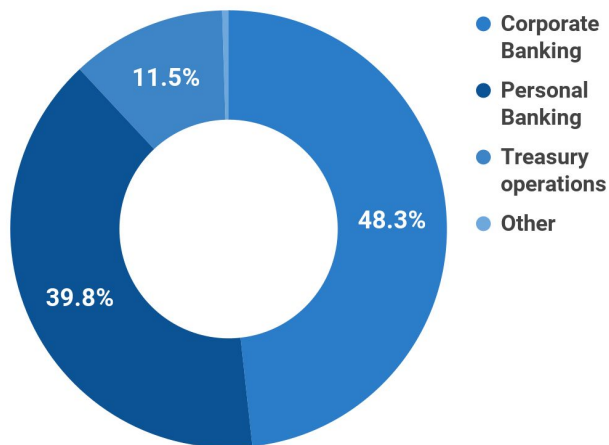
**The Personal Banking** offers personal loans, deposit-taking activities, card business, personal wealth management services to individual customers.

**The Treasury Business** covers money market transactions, investment securities, foreign exchange transactions and the holding of derivative positions, for its own account or on behalf of customers.

**The Other segments** includes assets, liabilities, income, and expenses that cannot be allocated to a segment.



### Revenue Structure, Interim 2021



Ticker	Volume (M)	Capitalization (\$B)	Growth Rate (%)	Beta (1Y)
601398 (SHA)	36.4	272.2	6.0%	0.51

**China Merchants Bank Co., Ltd** engages in the provision of corporate and personal banking services. It focuses on individual and corporate business, credit cards, and small and medium enterprises. It operates through the following business segments.

The company's revenue structure is as follows:  
**The Wholesale Finance** segment consists of savings and loans; settlement and cash management services; trade finance and offshore business; investment banking; interbank lending, buyback and other interbank business; asset custody business; financial market business, and other businesses.

**Retail Finance** segment includes savings and loans, bank card services, wealth management, private banking and other services.

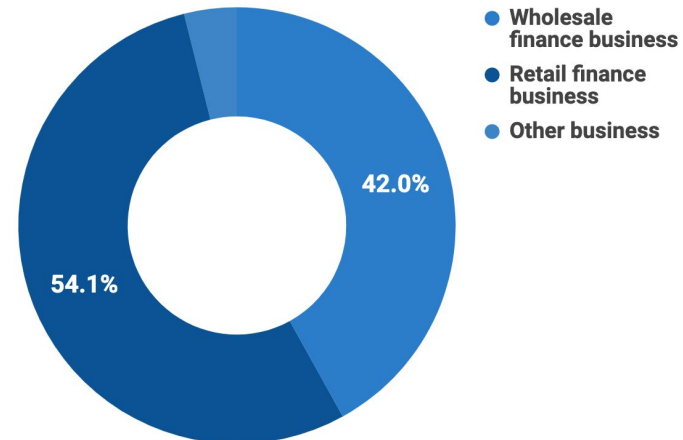
**Other segments** consist of investment real estate and the operations of the Company's subsidiaries, affiliated companies, and joint venture companies.

Ticker	Volume (M)	Capitalization (\$B)	Growth Rate (%)	Beta (1Y)
600036 (SHA)	36.4	217.6	1.9%	0.82

## Stock Price

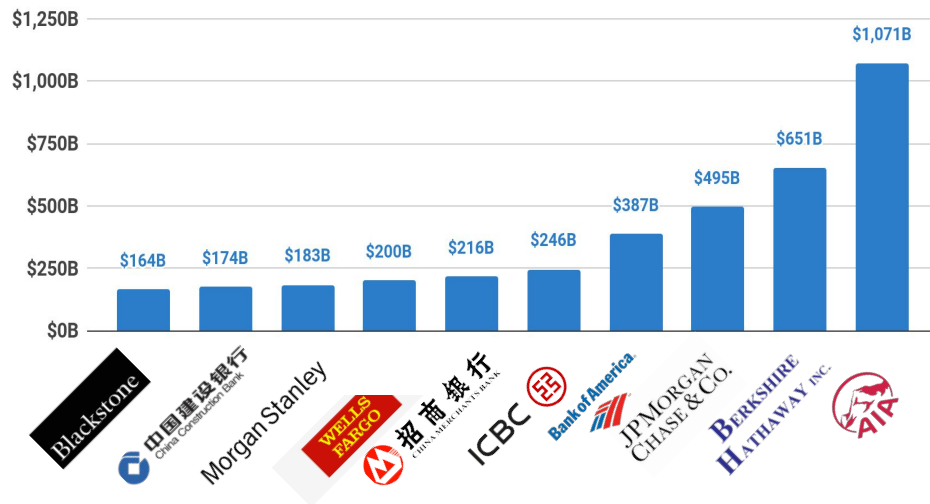


## Revenue Structure, Interim 2021



# ASSET MANAGERS ADVANCING THE LONGEVITY INDUSTRY IN 2021

## Top 10 Asset Management Firms by Market Capitalization



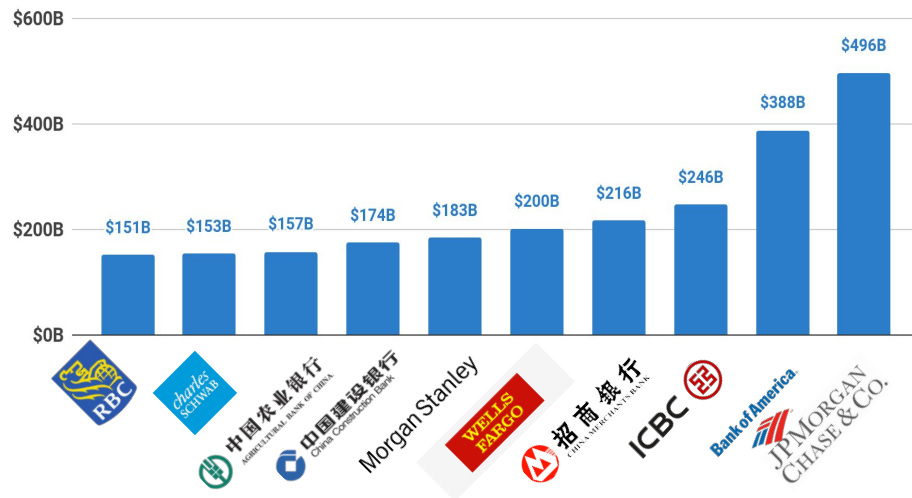
## Top 5 Asset Management Firms Market Dynamics



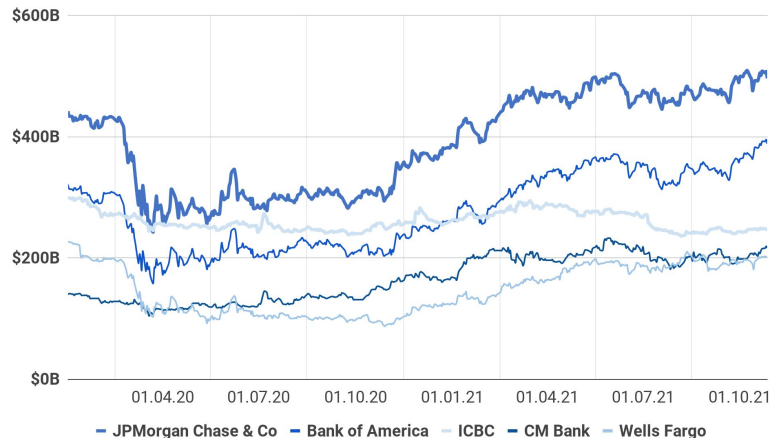
The year 2020 was a remarkably difficult year for the asset management industry, as it was for all sectors of the business world due to the Covid-19 pandemic. According to BCG's Global Asset Management 2021 Report, the total value of assets under management by the global asset management industry reached **\$103 trillion** by the end of 2020, an **11%** increase from **\$93 trillion** in 2019. The capitalization of Top 10 asset management firms is **\$3.7 trillion** (as of 28 October 2021) amounting to **15%** of the total in the longevity industry. Between now and the end of 2025, the surveyed asset managers expect **21% growth** in global AUM, broadly in line with recent global GDP trends.

# BANKS ADVANCING THE LONGEVITY INDUSTRY IN 2021

## Top 10 Banks by Market Capitalization



## Top 5 Banks Market Dynamics



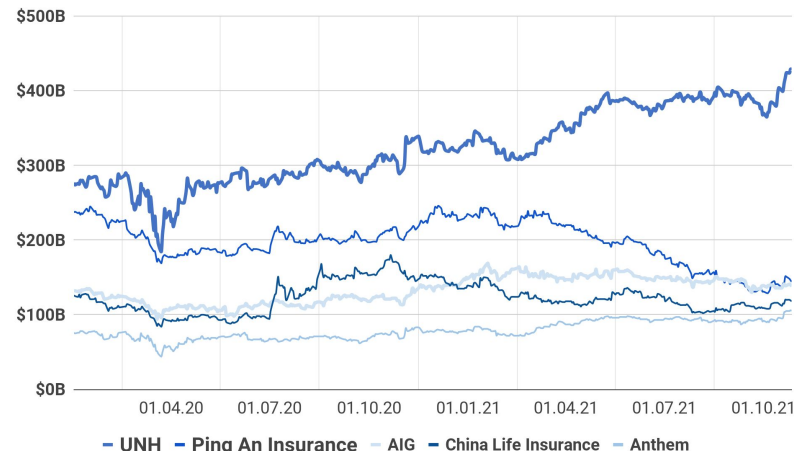
In a year marked by the COVID-19 pandemic, the largest Chinese financial institutions maintained their positions as the world's biggest banks by assets, according to S&P Global Market Intelligence. Despite the fact that the pandemic struck the industry hard, the number of banks in the world which have reported an asset size above **\$1 trillion** has increased from 29 to 39 in 2020. The most prominent players in the industry are JPMorgan Chase and Bank of America with **\$3.68 trillion** and **\$3.1 trillion** total assets as of Q3 2021, respectively. The capitalization of the Top 10 Banks is **\$2.3 trillion** (as of October 2021), amounting to almost **9%** of the longevity industry's total.

# INSURANCE COMPANIES ADVANCING THE LONGEVITY INDUSTRY IN 2021

## Top 10 Insurance Companies by Market Capitalization



## Top 5 Insurance Companies Market Dynamics



The insurance industry saw a milder dip in premiums during the COVID-19 crisis than during the global financial crisis (GFC) of 2008-09. The insurance companies believe that insurance markets will rebound faster from the pandemic than the global financial crisis. According to the leading insurance company, Swiss Re forecasted that global insurance demand will grow by an above-trend **3.3%** in 2021 and **3.9%** in 2022, which is a much faster rebound than from prior recessions. The capitalization of the Top 10 Insurance companies is **\$1.3 trillion** (as of October 2021) amounting to almost **5.6%** of the total in the longevity industry.



# PENSION FUNDS ADVANCING THE LONGEVITY INDUSTRY IN 2021

## Top 10 Corporate Pension Funds by Total Assets



Source: Swfinstitute, 2021

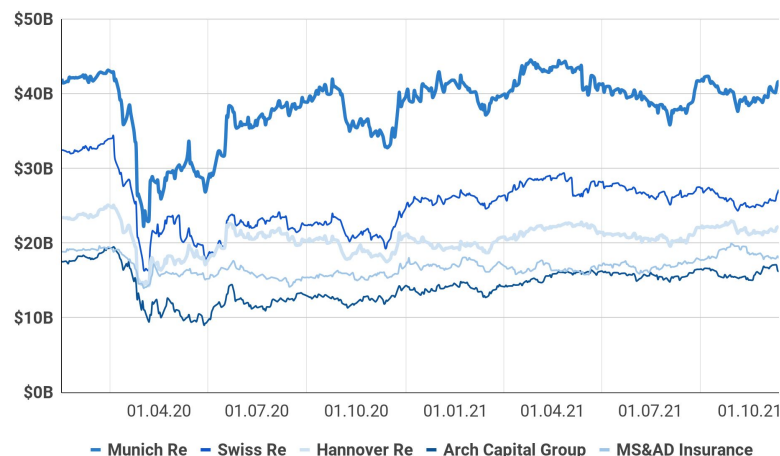
The capitalization of the Top 10 corporate pension funds is (as of October 2021), amounting to **3.8%** of the total in the longevity industry. Only 3 (NatWest Group Pension Fund, BT Pension Scheme and Royal Bank of Scotland Group Pension Fund) out of the Top 10 funds are located in Europe, others are American big corporates pension plans. According to OECD, preliminary data for 2020 show that pension funds held over **\$35 trillion** of assets worldwide at end-2020, exceeding 2019 levels despite the headwinds due to COVID-19. Pension fund assets grew by nearly **9%** in the OECD area – although less than the double-digit growth rate in 2019 – to reach **\$34.2 trillion** at end-2020. Outside the OECD area, pension fund assets amounted to **\$0.8 trillion** at end-2020 in a group of 31 jurisdictions, just over **1%** more than at end-2019.

# REINSURANCE FIRMS ADVANCING THE LONGEVITY INDUSTRY IN 2021

## Top 10 Reinsurance Companies by Market Capitalization

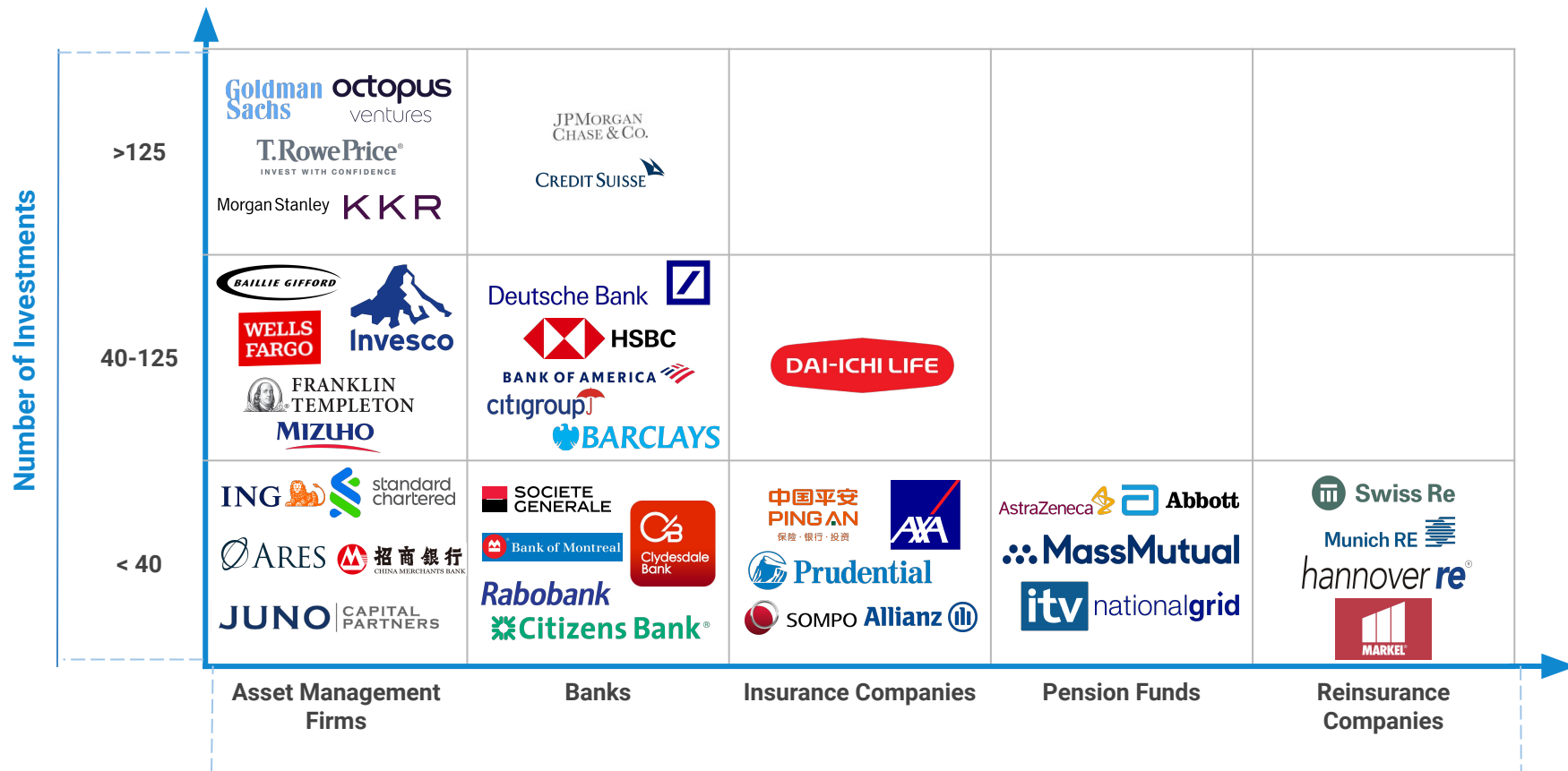


## Top 5 Reinsurance Companies Market Dynamics

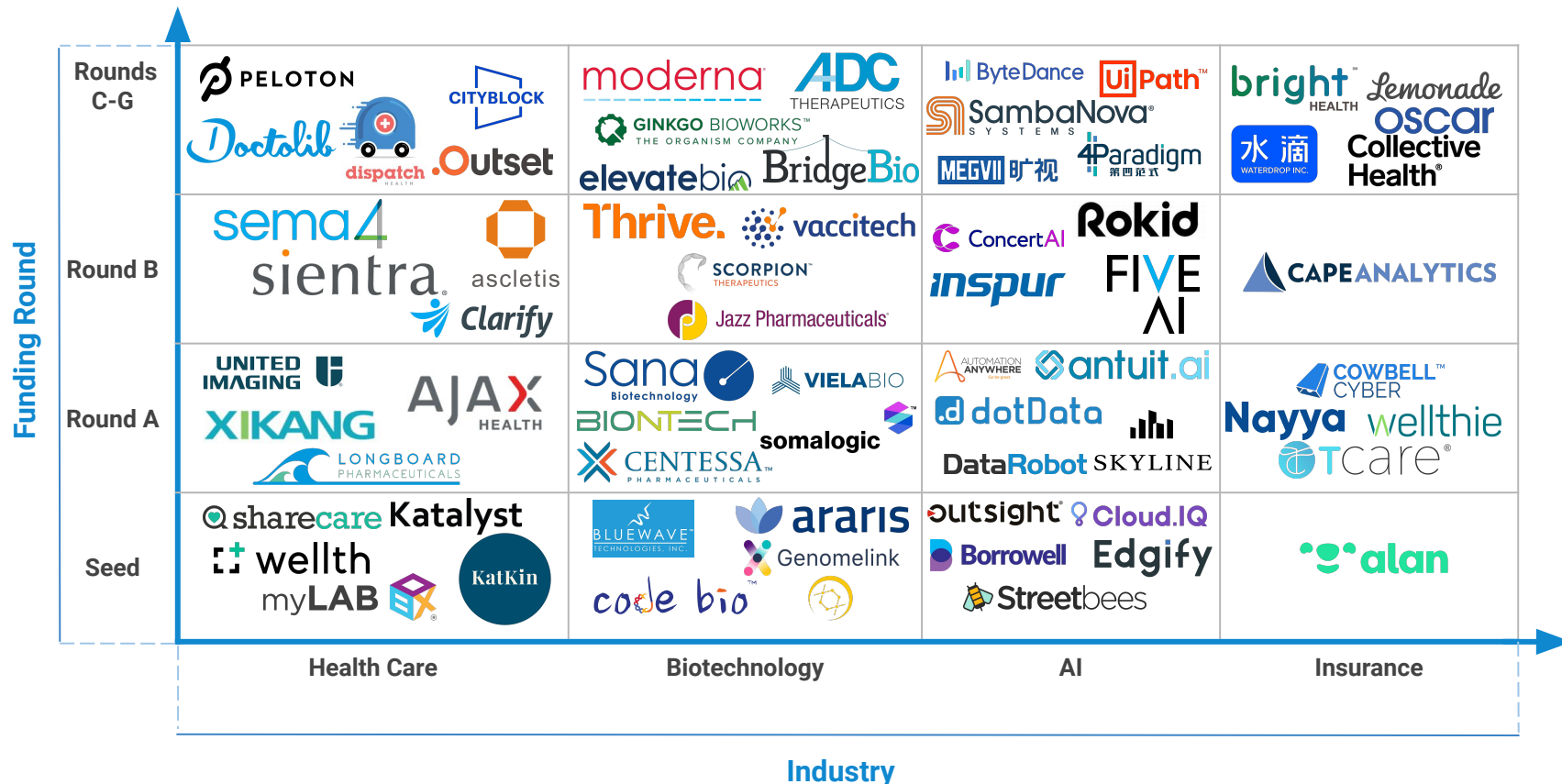


Total capital dedicated to the global reinsurance industry measured **\$588 billion** after the first six months of 2021, reflecting a **4%** increase from 31 December 2020. According to Fitch Ratings, the outlook for the global reinsurance sector is improving for 2022. The capitalization of Top 10 reinsurance companies is **\$157 billion** (As of October 2021), amounting to **0.6%** of the total in the longevity industry. The market is then expected to recover and grow at a **CAGR of 3.2%** from 2021 and reach **\$554 billion** in 2023. The industry relies on its very strong capital adequacy, which is generally sufficient to cushion it against catastrophe risk exposure.

# INVESTMENT ACTIVITY BY FINANCIAL INSTITUTIONS



# TOP COMPANIES BY MONEY RAISED CO-FUNDED BY FINANCIAL INSTITUTIONS



# DKG'S LONGEVITY FINANCIAL CONCEPTS AND PRODUCTS

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## Overview



# LONGEVITY INVESTMENT BANK - CONCEPT

The fundamental purpose set for the Longevity Investment Bank is the creation of an end-to-end platform to service corporate and institutional investors intending to trade longevity financial assets and instruments. Longevity Investment Bank will enable involved parties to manage their investments, thereby creating innovative environments with advanced InvestTech solutions.

The novel nature of the Longevity Investment Bank lies, among others, in:

- Sophisticated Longevity investment analytics
- Bringing the most innovative developments in HealthTech, BioTech and Longevity Industries into the financial scope of emerging investment products and financial services
- Providing parties involved with comprehensive data for making investment decisions
- Long-lasting assistance in investment portfolio management based exclusively on our proprietary data

## Who can benefit?

<b>Independent Financial Advisors</b>	<b>Private Equity Funds</b>
<b>Private Banks &amp; Wealth Managers</b>	<b>Corporations</b>
<b>Asset Management Companies</b>	<b>Venture Capital Funds</b>
<b>Challenger Banks</b>	<b>Retail Banks</b>
<b>Pension Funds</b>	<b>Insurance Companies</b>

# LONGEVITY INVESTMENT BANK SERVICES

## Advisory

Management advisory

M&A and private placements

Technical due diligence

Scientific due diligence

Government relations advisory

Strategy advisory

## Fundraising

IPO preparation and implementation

Preparation for funding rounds

Secondary public offerings

Public debt placements

Underwriting

Financial statements quality control

## Brokerage and Trading Services

Market making

Buying - selling assets on behalf of clients

Lending to clients for margin transactions

Providing information support

De-risking of investments

Hedging

## Investment management

Portfolio management and optimization

Diversification

Investment targets selection

Performance measurement

Wealth management

Risk optimization

## Research

Macroeconomic and industry research

Buy-sell recommendations

Credit risk assessment

Corporate finance analysis

Quantitative and econometric analysis

Financial data management

## Financial Engineering

Structured products

Stock futures and options

Swaps

HALE/QALE derivatives

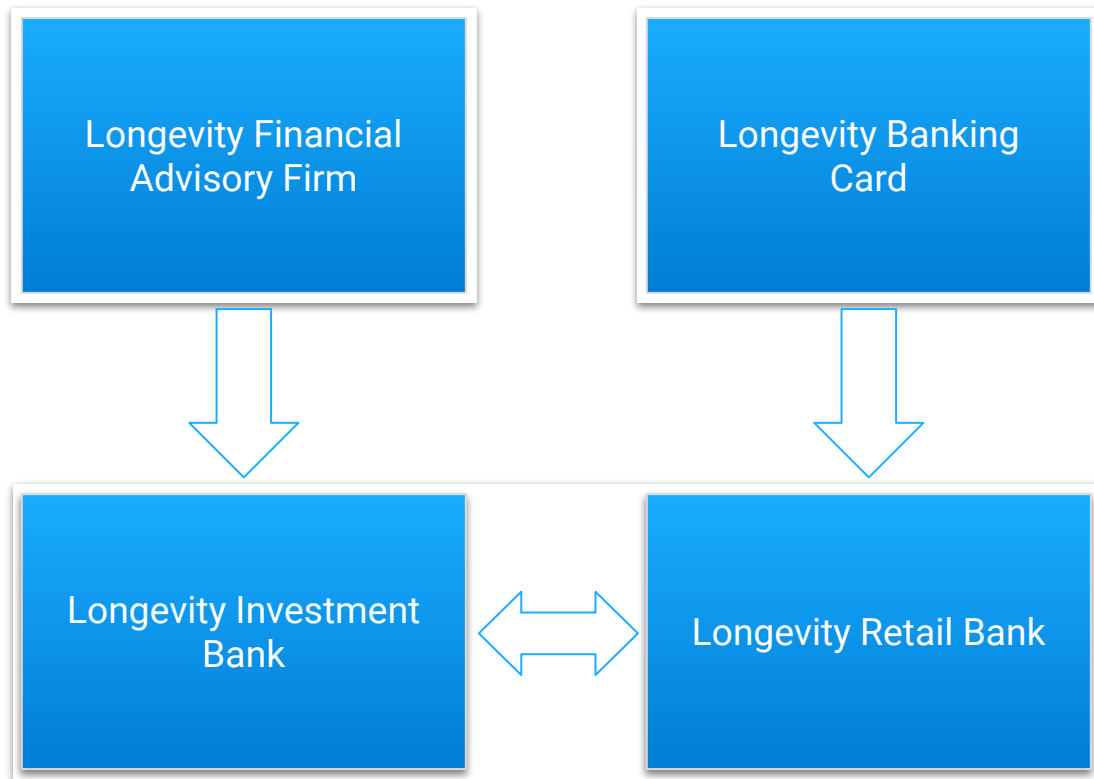
Performance trackers

Biomarkers derivatives

# LONGEVITY RETAIL AND INVESTMENT BANK

The next stage of the development of Longevity investment bank is a full-fledged Longevity Bank. **Longevity Bank as combination of retail and investment banks** is one of the Next Generation projects we currently pursuing. This transition will be naturally executed based on the integration of Longevity Investment Platform of Financial Advisory Firm, an intellectual service-oriented entity, and our Longevity Banking Card solution, bringing these technologies to their finest. After the Proof of Concept during 2021-2022, the full scope of services will be provided by the Investment Bank under a full banking license.

Longevity Retail Bank will act in the form of an **enhanced classical retail bank** providing such well-known services as personal loans and home equity loans, issuing different types of bank cards, creating savings accounts, financial instruments and so on.





# LONGEVITY BIOMARKERS INVESTMENT BANK - CONCEPT

**Longevity Investment Bank is not the only banking activity developed by Deep Knowledge Group. Based on the scientific advances in biomarkers area and with support of Longevity Biomarkers Firm, Deep Knowledge Group aims to launch a Longevity Biomarkers Investment Bank**

The fundamental purpose set for the Longevity Biomarkers Investment Bank is the creation of a platform to service corporate and institutional investors intending to trade longevity financial assets and instruments. Longevity Investment Bank will enable involved parties to manage their investments, thereby creating innovative environments with advanced InvestTech solutions.

The novel nature of the Longevity Investment Bank lies, among others, in:

- Implementation of the biomarkers-based due diligence and valuation.
- Creation of the uniquely engineered Longevity-tied financial instruments (e.g. biomarkers-tied swaps, swaptions, bonds, CLOs, etc.).
- Providing comprehensive market assessment based on the unique scientific approach tied to the R&D developments of the participating companies.

The Longevity Biomarkers Investment Bank will serve as a first-of-its-kind scientifically-backed investment advisor and underwriting entity.

## Who can benefit?

Independent Financial Advisors	Private Equity Funds
Private Banks & Wealth Managers	Corporations
Asset Management Companies	Venture Capital Funds
Challenger Banks	Retail Banks
Pension Funds	Insurance Companies

# LONGEVITY BIOMARKERS INVESTMENT BANK SERVICES

Advisory	Fundraising	Brokerage Services	Trading	Research	Investment Management	Financial Derivatives Production
Risk management and assessment	IPO preparation and implementation	Market making	Stock trading	Macroeconomic and industry research	Portfolio management and optimization	Structured products
Advising on mergers and acquisitions	Preparation for funding rounds	Buying and selling assets on behalf of clients	Debt securities trading	Buy-sell recommendations	Diversification strategies	Stock futures and options
Advising on capital raising	Preparation for secondary public offerings	Lending to clients for margin transactions	Financial derivatives trading	Financial analysis and reports on specific companies	Investment targets selection	Swaps
Advising on investment	Due diligence	Providing informational support about market goings-on	Structuring	Credit risk assessment and credit ranking	Performance measurement	HALE/QALE derivatives
Advising on portfolio management	Underwriting	Investor-company matching	De-risking of investments	Quantitative finance and econometric analysis of financial statistics and price dynamics	Personalized investment strategies development	Performance trackers
Advising on management and strategy	Debt offerings	Risk optimization advisory	Hedging	Corporate finance	Risk optimization	Biomarkers derivatives

# LONGEVITY BANKING CARD



Longevity Card signed a long-term contract with Accomplish Financial (a one-stop-shop banking as a service provider) in July 2020. On the August 26, Longevity Card issued its first MVP debit card with AF Payments Limited, under a license by Mastercard International and its Principal Member. The Financial Conduct Authority authorises AF Payments Limited under the Electronic Money Regulations 2011 (FRN: 900440) to issue electronic money and payment instruments.



Longevity Card built a test MVP app, which is presented on the Apple Store and Google Play. The primary purpose of the test App creation was the successful integration and testing of underlying banking technologies.

## Longevity Card Marketplace Partners:



# LONGEVITY CARD OVERVIEW

## LONGEVITY ECOSYSTEM



- Single Longevity ID for all products;
- Longevity Banking Card;
- Longevity Club Card;
- Longevity Mobile mHealth App;
- Longevity Marketplace;
- Longevity Rewards;
- Longevity Club Events;
- Proprietary Analytics and News;
- Longevity Business Account;
- Wallet featuring ecosystem products;

## ROBO ADVISORS AND ASSISTANTS



- Voice Assistant;
- Chatbot;
- Longevity Stories;
- Financial Planner;
- Personalized Offers with up to 30% cash-back / reward points;
- Big Data and Machine Learning;
- Biometrics and other technologies;

## OFFERS FROM PARTNERS IN VARIETY OF INDUSTRIES

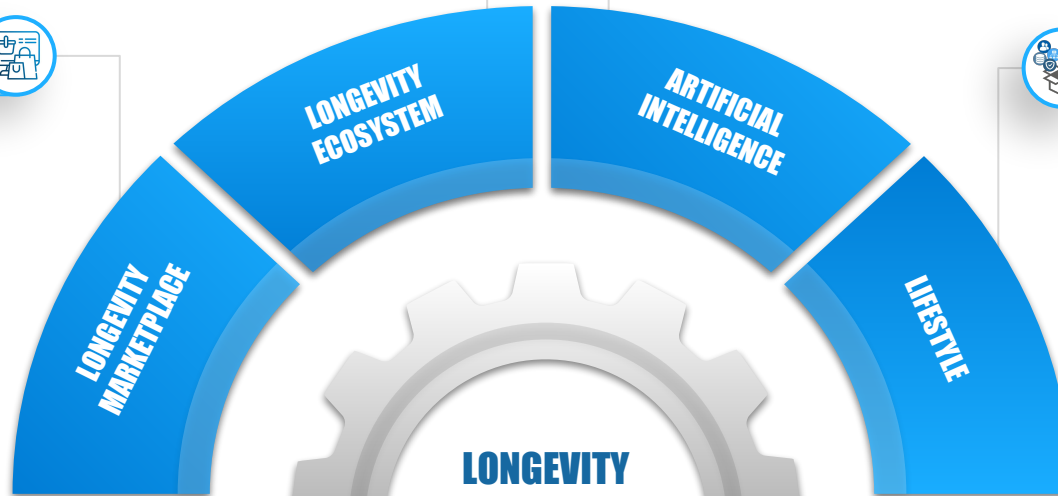


- Products and Online Retail;
- Health and Beauty;
- Fitness and Wellness;
- Telemedicine;
- Nutrition and Vitamins;
- Health Diagnostic Services;
- Prognostic Services;
- Yoga;
- Local GPs;
- Education;

## INTEGRATION OF OWN SERVICES



- mHealth;
- Insurance;
- Personal Tips;
- Accounting;
- Travel;
- Shopping;
- Healthy Lifestyle Coach;



# CARD

## LONGEVITY REWARDS

### LONGEVITY CARD LOYALTY PROGRAM



- Management of longevity points, bonuses and discounts;
- Referral Program;
- Rewards for Healthdata;
- Longevity Ambassador Program;
- Additional discounts for gaining advanced loyalty levels;

## LONGEVITY CARD FOR ELDERLY

### SPECIALIZED FINANCIAL PRODUCT FOR SENIORS



- Banking Services for people 70+ years old;
- Transaction limits and spending control;
- Prevention of financial exploitation;
- Children and grandchildren can be assigned tasks and earn rewards for their grandparents for their completion;
- Lifestyle services for Elderly;
- Longevity Elderly App;
- Implementation of AgeTech;

## DAILY BANKING

### MANAGING YOUR FINANCE HAS NEVER BEEN SO EASY



- All Longevity Card financial products;
- Debit and Prepaid Cards;
- ATM Withdrawals;
- Cash loading in the partner network;
- Post offices cash loading;
- Itemised receipts;
- Filter-enabled expense statistics;
- Statement and other document requests;
- 24/7 live customer support;
- Apple Pay, Samsung Pay, Google Pay;

## PAYMENTS AND TRANSFERS

### PAY, SEND AND RECEIVE MONEY FAST



- Domestic and International Transfers;
- Direct Debits;
- SEPA Payments;
- Faster Payments;
- SWIFT Payments;

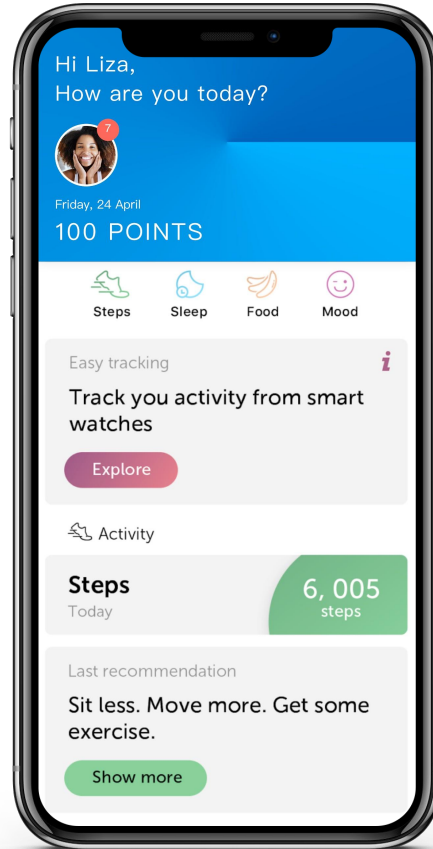
# HEALTHTECH INTEGRATION

HEALTHSPAN  
AND FITNESS  
GAMIFICATION

LONGEVITY  
POINTS

DAILY ACTIVITY  
ANALYSIS

SLEEP  
ANALYSIS



AI POWERED  
PERSONALISED  
RECOMMENDATIONS

WEARABLES  
COMPATIBLE

LONGEVITY  
STORIES

NUTRIENT  
TRACKING

# IN-APP BANKING FEATURES

- ❑ Card freeze (on/off)
- ❑ Opposition of the card (on/off)
- ❑ Withdrawal (on/off)
- ❑ Online payment (on/off)
- ❑ Contactless payment (on/off)
- ❑ Card limits (expenses / withdrawals)
- ❑ Payment by geographical area (euro zone / europe)
- ❑ Payment by currency (euro / gbp)
- ❑ Payment by time bands (9h> 21h)
- ❑ Payment per day (working days / exclusion sunday)
- ❑ Shared payment (couple, roommate, parent-child)
- ❑ Payment by categories of merchants (restaurants, hotels)
- ❑ Payment by age group
- ❑ Card activation / order
- ❑ Payment by virtual card
- ❑ Pin code customization





[READ THE ARTICLE](#)

"Pioneers of the new world: Your winners. After a wave of nominations from our readers, we have selected over 80 European founders and companies shaping the post-pandemic world."

## FINTECH FUTURES

[READ THE ARTICLE](#)

"Longevity Card users can also earn 'Longevity Points' by tracking their daily activity and nutrition through the app, which the fintech will do through an artificial intelligence (AI) healthtech integration. They can then spend these on products within the marketplace ecosystem."

[READ THE ARTICLE](#)

"Currently Longevity Card is in the process of creating a focus group of 70+ aged people, which will be responsible for making the seamless user journey for the Seniors."

[READ THE ARTICLE](#)

"Longevity Card aims to make users' mobile banking experience more convenient and intuitive for all ages. It will offer Healthtech and Agetech services that include financial products designed specifically for people who may live live extra long lives and would like to remain high functioning and financially independent."

[READ THE ARTICLE](#)

"Longevity Card is part of a project that will transform traditional banking into the health- and longevity- focused generation of financial services."

## VERDICT

[READ THE ARTICLE](#)

"There has never been more emphasis on physical fitness: every day there seems to be a new workout or meal plan designed to get us into shape. But what if there were also a financial incentive? Meet Longevity Card, which combines maintaining a healthy lifestyle with money management."



# KEY TAKEAWAYS

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## Overview



# MAJOR OBSERVATIONS FOR Q3 2021: KEY BUSINESS TAKEAWAYS

1. **The Banking industry** is beginning to realize the potential of the older population, as they poses of approximately one trillion USD globally in accumulated savings, developing their brands as **Age-Friendly Banks**. They begin to adapt their services to seniors, and consider them as valuable customers to the business.
2. The capitalization of Top 10 asset management firms has reached **\$3.7 trillion** amounting to **15%** of the total in the longevity industry and making a **117% growth** since 2020.
3. Total capital dedicated to the global **reinsurance industry** measured **\$588 billion** after the first six months of 2021, reflecting a **4%** increase from 31 December 2020.
4. There is a lasting trend of increasing role of China's banking sector: in 2020, the total assets of saw a steady expansion, with improved asset quality. By the end of 2020, the total assets of China's banking institutions climbed 10.1 percent year-on-year to RMB 319.7 trillion.
5. **Large institutional investors' interest in the Longevity industry** gains momentum. Most developed longevity startups are becoming mature companies and are in need of more resources. Besides that, longevity companies tend to intensify their corporation with banks, governments, and other companies in the industry, which brings more competition in the sector.

# OBSERVATIONS IN 2021: KEY FINANCIAL AND INVESTMENT TAKEAWAYS

1. Following the economic recovery on the future trajectory of COVID-19, **the global financial services market is expected to grow over the next five years by annual growth of 6%**. Large technology companies and fintech companies will provide the growth of the market capitalization of the financial services industry.
2. **The banking industry**, like many others, has faced serious challenges in carrying out its day-to-day responsibilities in pursuit of financial goals. The steepest revenue declines are expected in North America and Western Europe **0.4 - 2.5%** and **0.9 - 3.0%** decrease.
3. **The US continues to be the largest pension market in the world**, and accounts for **62%** of the global pension market assets. **Social Security Trust Funds** is the biggest pension fund with total assets of almost **3 trillion USD**.
4. During the last ten years, **China** has been the fastest-growing pension market showing a **680%** rise since 2010.
5. Global **non-life premium growth is expected to recover to 3.6% in 2021 and 2022**, supported by strong rate hardening in commercial lines across countries.
6. **The US is a leader among countries by allocation of Financial Institutions engaged in the Longevity Industry** and total market capitalization of those institutions. There are 107 Financial Institutions with an aggregate capitalization of almost **\$4 trillion**.
7. **The Asset Management industry shows increasing interest in alternative investments**. With the introduction of regulations in addition to FATCA, MIFID, and Basel, the alternative asset space is significantly impacted: Lipper, Hedge Fund Research, and Preqin forecast the sector's annual expansion by **6.3%** and **9.8%**, respectively, for the two periods: 2017 and 2025.

# FINANCIAL INSTITUTION'S IMPACT ON THE LONGEVITY INDUSTRY

1. **The pivotal role of Financial Institutions is to provide liquidity to the Longevity Industry and permit a higher level of economic activity than would otherwise be possible.** By carrying out their function as financial intermediaries, financial institutions make available a larger pool of capital than would be available in their absence. Financial Institutions' involvement with investment targets usually involves a transformation of investment targets' capital structures that reduces the overall cost of capital.
2. **Moving Financial Resources.** Financial Institutions assist with larger transfers of funds like corporate investments, purchases of real estate, and construction loans. Financial Institutions transfer resources from one party to another more efficiently and with more flexibility than companies can.
3. **Risk Management.** Financial institutions manage risk and uncertainty for companies. Insurance companies and other portions of the financial sector allow large numbers of entities to pool and share the risk, making it easier to handle accidents and other difficulties that occur in companies.
4. **Pension Funds are among the most connected to the Longevity Industry.** While pension funds take responsibility for the financial wellbeing of the aging population, the Longevity Industry makes efforts to extend the health wellbeing of the aging population. Recent trends have shown a shift to defined contribution pension schemes which give more freedom to investment strategies of pension funds, thus enabling investing in relatively risky Longevity Industry companies.
5. Being the institutions making the guarantees based on the entire lifetime of individuals, **insurance and reinsurance companies are exposed to impact of longevity risks to a greater extent.** Given the lack of longevity insurance capacity within the sector, the financial markets could provide innovative solutions to hedging longevity risk.

# ABOUT US

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InvestTech  
Advanced  
Solutions



# ABOUT AGING ANALYTICS AGENCY

## Our Value Proposition:

### ● Open Access and Proprietary Analytical Case Studies

Aging Analytics Agency is producing regular open-access reports covering emerging longevity markets — technologies, innovations, companies, and trends. Our clients and partners can enjoy access to proprietary reports featuring additional in-depth research conducted by our team on a regular basis.

### ● IT-Platform and Big Data Analytics Dashboard

Our company is building a sophisticated cloud-based engine for advanced market and business intelligence in the longevity biotech, medicine, finance, and governance industries. It includes a data mining engine, infrastructure for expert data curation, and advanced visualization dashboards, including mindmaps, knowledge graphs, and 3-dimensional visualizations.

### ● Strategic Consulting

Aging Analytics Agency offers a comprehensive range of consulting services, conducting customized case studies, research, and analytics for internal (organizational) use, tailored to the precise needs of specific clients.

# Who We Are

Aging Analytics Agency is the world's premier provider of industry analytics on the topics of Longevity, Precision Preventive Medicine and Economics of Aging, and the convergence of technologies such as AI, Blockchain, Digital Health, and their impact on healthcare industry.

Aging Analytics Agency is open for cooperation with strategic clients via a variety of approaches, including:

- Conducting customised case studies, research and analytics for internal (organizational) use, tailored to the precise needs of specific clients;
- Producing open-access analytical reports;
- Offering customised analysis using specialised interactive industry and technology databases and IT-platforms.

# ABOUT INVESTTECH ADVANCED SOLUTIONS



# Who We Are

InvestTech Advanced Solutions provides modern investment analytics and data management tools and algorithms.

Our products are **sophisticated data-driven quantifiable investment recommendations** generated to conduct tangible, fast, comprehensive, and inexpensive **analysis and due diligence for deep tech startups, companies, and corporations**, represented in investment reports.

In addition, InvestTech Advanced Solutions provides proprietary **real-time financial analytics and consulting** for publicly traded corporations in deep tech sectors, which includes 3 stages: data parsing, AI-driven data analysis, and user-friendly data visualization.

InvestTech Advanced Solutions also specializes in **advanced financial engineering**, including **financial derivatives construction and de-risking methods and tools development**.

# INVESTTECH ADVANCED SOLUTIONS: ANALYTICAL REPORTS

InvestTech Advanced Solutions in cooperation with analytical subsidiaries of Deep Knowledge Group produces regular open access reports covering emerging technologies, innovations, companies, and trends across the variety of DeepTech domains.

These reports focus on major areas of high-potential industries, maintaining ratings of market players based on their innovation potential and business activity.

The scope of analytical reports accounts for over 10 investment digests that are subject to periodic updates. The elements comprised in every report are as follows:

Industry Trends	Investors	Investment Rounds	R&D Trends
Venture capital ecosystem	Private Companies	Public Companies	M&A Landscape

Explore the entire scope of analytical reports at:

[www.invest-solutions.tech/reports](http://www.invest-solutions.tech/reports)

## Longevity Investment Digest

This landmark report outlines major investment rounds, relevant R&D trends, illustrates the traction of the Longevity Industry and delivers the comparison of market players. The information in the digest covers key industry trends, 23,000 Longevity companies, 50 leading investors, and more than 600 Longevity-focused publicly traded corporations.





# INVESTTECH ADVANCED SOLUTIONS: PROPRIETARY ANALYTICS

Some of the more in-depth research is only available to our clients and strategic partners as proprietary analytics. As a rule, this analytics covers the topics that are of great interest to parties concerned and delivers the extensive scope of information on particular topics.

Proprietary Analytics delivers practical answers to certain questions in order to optimize the short and long-term strategies of companies related to the industry. Proprietary reports are supported by our rapidly developing data mining engine and analytics dashboards.

Ready-to-use  
proprietary  
reports

Custom  
Consulting  
Projects

Investment  
Prospects

M&A  
Prospects

Strategic  
Growth Ideas

Trends  
Profiling

Niche  
Industries  
Overviews

Case Studies

Access our website to learn more:

[www.invest-solutions.tech](http://www.invest-solutions.tech)

## Proprietary Version of Longevity Derivatives and Financial Instruments Report

This report thoughtfully explores Longevity-derived financial instruments. The study includes derivatives explanation and analysis, including the comparison to other financial instruments. The proprietary version delivers an exhaustive overview of the biomarkers-based Longevity assessment solutions.



# LONGEVITY INDUSTRY BIG DATA ANALYTICAL DASHBOARDS

## Dashboard Overview

Aging Analytics Agency is working on a sophisticated cloud-based engine designed for advanced market and business intelligence in various segments of the longevity industry. It includes a data mining engine, infrastructure for expert data curation, and advanced visualization dashboards: mind maps, knowledge graphs, and 3D visualizations. It also offers data-driven insights into the trends in the longevity industry, SWOT analysis, investment advisory, business, and technical due diligence.

Matching Tool	Machine Learning for Database Extrapolation	Dynamic SWOT Analysis Representing Evolution of a Company
Companies Database	Machine Learning and Deep Neural Networks for Companies Clusterization	Interactive Industry Mindmaps
Investors Database	Machine Learning for Financial Indicators Predictions	Real-time Financial Data Analytics Platform for AI in Pharma Corporations
SWOT Analysis	Interactive AI-based Scenario Analysis and Financial Planning	AI in Pharma Financial Instruments Analytics

## Database, AI and ML Algorithms Overview

Parameters	400 parameters with appropriate weights combined into 20 vectors
Data Points	8 000 000 data points which are being updated permanently
Algorithms	Deep neural networks, polynomial formulas with mathematical transformations, regression models
Data Aggregation	Automatized parsing, extrapolation using machine learning, feedback from companies

## Who Can Benefit

- Investment institutions, funds, investment banks, family offices;
- Private and public companies in pharma/biotech space;
- Research institutions, universities;
- Technology vendors and contract research organizations;
- Startup hubs, accelerators;
- Consulting companies and agencies.

# LONGEVITY FINANCE BIG DATA ANALYTICS DASHBOARD

Developed by InvestTech Advanced Solutions based on the data provided the Aging Analytics Agency, the Longevity Finance Analytics Dashboard is a **licensed white-label solution** designed for financial corporations (e.g. banks, pension funds, asset management firms and insurance companies) looking to adjust their business models to longevity-focused banking and **tap into the multi-trillion dollar market of 1 billion people** in retirement.

The project aims to provide **tangible, data-driven, fast, comprehensive and inexpensive SWOT analysis, customised practical recommendations, benchmarking, forecasting and guidance** needed to transform financial institutions for longevity-related challenges in the future.



The analytics provided herein can help deliver value to financial institutions and adjust their business models to Longevity-related challenges in the future

## Financial Institutions (e.g. Banks, Pension Funds, Asset Management Firms and Insurance Companies)

- SWOT analysis of the most promising entities and technologies
- Real-time monitoring of the developments in the Longevity financial industry
- Benchmarking of the most market-ready Longevity finance technologies
- Due diligence of emerging technologies' strengths
- Opportunities forecasting

# LONGEVITY INVESTMENT BIG DATA ANALYTICS DASHBOARD

The Longevity Investment Analytics Dashboard developed by InvestTech Advanced Solutions based on the data provided the Aging Analytics Agency which is active in the industry since 2013 aims to produce **knowledge-based validated investment insights** covering four major longevity branches: financial longevity industry, longevity R&D, longevity medicine and longevity technology.

The project generates **quantifiable and advanced data-driven investment recommendations** to conduct **an effective and inexpensive SWOT analysis and due diligence** for Longevity companies and investors, and **real-time financial analytics and consulting** for private and publicly traded companies across 20 Longevity sectors.



The analytics can deliver funding targets to investors, funding to companies and detailed SWOT analysis

## Investors

- Comprehensive market analysis
- Due diligence and SWOT analysis of investment targets
- Analysis of the strategies of leading industry investors

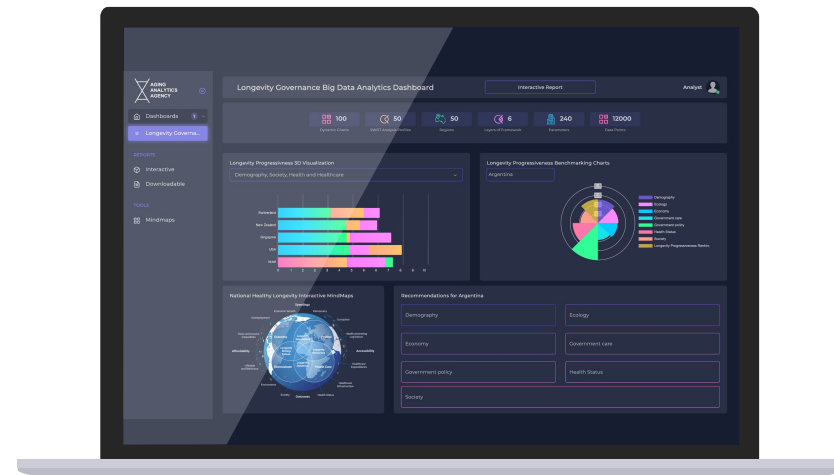
## Companies

- SWOT analysis of competitors
- Automated business development recommendations
- AI-based matching with investors

# LONGEVITY GOVERNANCE BIG DATA ANALYTICS DASHBOARD

The Longevity Governance Dashboard brings access to continuous monitoring of the specific governmental policy activities directly impacting both National Healthy Longevity and Longevity Industrialization, and to consistently track and analyze data points related to government-led Longevity Development initiatives.

Its aim is to deliver strategic decision makers across the private sector, global investment community, financial industry, and governance access to Big Data analytics and visualization, market intelligence, competitive analysis, technology and company benchmarking, SWOT analysis, practical recommendations and other strategic toolset capable of handling the unprecedented complexity and multidimensionality of the full-scope Global Longevity public and private sector ecosystem.



The analytics provided herein identify factors with the greatest effect on the gap between life expectancy and Health-Adjusted Life Expectancy

## Government Agencies, Healthcare, Economy & Industrial Development Ministries, & International Policy Organizations

- Features region-specific recommendation packs
- Provides tangible and practical recommendations tuned to the specifics of individual countries
- Precision Health

# LONGEVITY FINANCIAL ADVISORS / SCOPE OF SERVICES

Longevity Financial Advisors is providing a range of next-generation advisory services to companies and investors operating in the Longevity Industry and facilitate the creation of a safe, liquid investment and fundraising environment to contribute to the industry's sustainable growth.

**WealthTech**

**M&A Advisory**

**InvestTech**

**Structured Financial Products**

**RegTech**

**LegalTech**

**Ergonomic IT-Platform**

**Big Data Investment Analytics**

**Automated Completion  
Mechanics**

**Private Placement Advisory**

**Portfolio Performance  
Metrics**

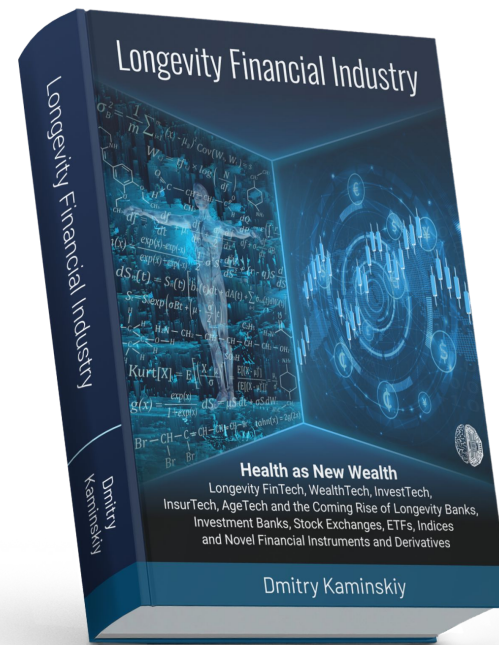
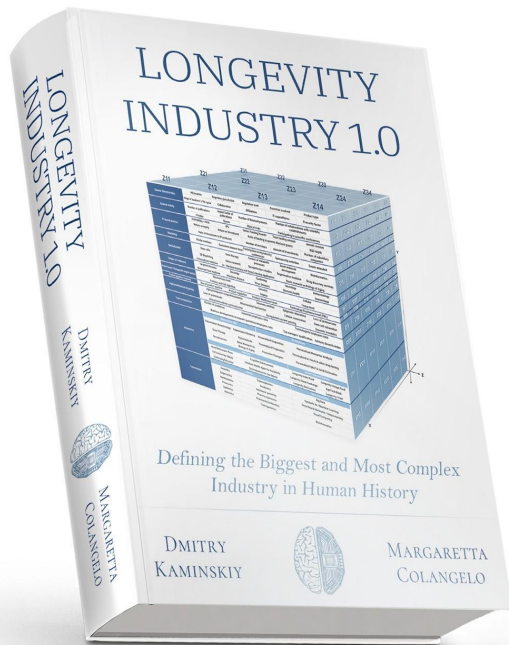
**Industry Research**

**Instantaneous  
Multiparametric SWOT  
Analysis**

**Risk Optimisation**

**Investment Target Selection**

**Automated Technical &  
Scientific Due Diligence**



### 2010-2020: Evolution of the Longevity Industry from Zero to 1.0

- The Industrialization of Longevity
- The Current State of Longevity Science, Business, Finance, and Practical Applications
- Longevity Becomes a National Priority Item for the Strategic Agenda of Progressive Governments
- Transforming the Challenge and Deficit of Aging into the Opportunity and Asset of Longevity
- Defining and De-Risking: Hype vs. Reality

### Health as New Wealth, Engineered Solutions to Bridge the Longevity Liquidity Gap, and the Rise of Longevity Investment Banks, Stock Exchanges and Financial Instruments

- Engineered InvestTech and FinTech Solutions to Bridge the Big Liquidity Gap
- Longevity Futures, Shorting, Exchange Traded Funds and Technology Marketplaces
- Longevity Stock Exchange, Investment Bank, Index Fund and Financial Derivatives
- Financial Futurism: Derivatives Tied to National Healthcare Systems, Pension Systems, National Healthy Longevity & Longevity Economies



[info@aginganalytics.com](mailto:info@aginganalytics.com)

[info@invest-solutions.tech](mailto:info@invest-solutions.tech)

[www.aginganalytics.com](http://www.aginganalytics.com)

[www.invest-solutions.tech](http://www.invest-solutions.tech)

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