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# VALUATION OF AN INSURANCE INDUSTRY COMPANY: THE CASE OF ALLIANZ SE

BOYI WU

JUNE 2023

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VALUATION OF AN INSURANCE INDUSTRY COMPANY:
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MARIYA GUBAREVA

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# Abstract

This document presents an Equity Research performed on Allianz SE, following the guidelines of CFA Institute, used for the purpose of Masters Final Work.

Allianz SE is a German insurance company with an international exposure, present in more than 70 countries, operating in areas such as life and non-life insurance, which they define as Life-Health and Property-Casualty, asset management and Corporate and others.

The valuation of Allianz's performance is based on the historic period from 2017 to 2022 with the forecasting period for the years 2023 to 2027.

The main valuation method applied was the Residual Income Valuation, given the specificities of the industry, and models such as Dividend Discount Model and Relative Valuation with multiples to complement the recommendation of a HOLD of Allianz SE, at a price target of €237.44, upside potential of c.13.7%. The assigned investment risk level is medium risk, considering the impacts of market risk and underwriting risk on the company's ability to accurately forecast earnings.

JEL classification: G10; G22; G32; G34; G35

Keywords: Allianz; Insurance Industry; Equity Research; Valuation; Mergers & Acquisitions.

# Resumo

O presente documento apresenta uma Equity Research aplicado à Allianz SE, seguindo as orientações propostas pelo CFA Institute, no âmbito da MFW.

Allianz SE é uma companhia de seguros alemã com uma exposição internacional, presente em mais de 70 países, opera nas áreas de seguros de vida e não vida, que é definido como Property-Casualty e Life-Health, gestão de ativos e Corporate e outros.

A avaliação do desempenho da Allianz fundamenta-se no período histórico de 2017 a 2022, com o período de previsão para os anos de 2023 a 2027.

Este relatório aplica a Avaliação do Rendimento Residual, dadas as especificidades da indústria, e modelos como o Modelo de Desconto de Dividendos e Avaliação Relativa para complementar a recomendação de compra da Allianz SE, a um preço-alvo de €237.44, representando um potencial de aumento de cerca de 13.7%. O nível de risco atribuído é considerado médio, tendo em conta os impactos do risco de mercado e do risco de subscrição de prémios na capacidade da empresa de prever com precisão os ganhos.

Classificação JEL: G10; G22; G32; G34; G35

Palavras-Chave: Allianz, Seguradoras, Equity Research; Avaliação de Empresas; Fusões e Aquisições.

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# List of Abbreviations

| | |
|---|---|
| $ | US Dollars |
| € | Euros |
| AM | Asset Management |
| APAC | Asian- Pacific |
| BM | Board of Management |
| Bn | Billion |
| Bps | Basis points |
| c. | Circa |
| CAGR | Compounded Annual Growth Rate |
| CAPM | Capital Asset Pricing Model |
| CRP | Country Risk Premium |
| DDM | Dividend Discount Model |
| DPS | Dividend per Share |
| E | Expected |
| EBIT | Operating income |
| EMEA | Europe, Middle East and Africa |
| EPS | Earnings per Share |
| F | Forecast |
| FY | Fiscal Year |
| GDP | Gross Domestic Product |
| GM | General Meeting |
| K | Thousands |
| Ke | Cost of Equity |
| LATAM | Latin America |
| LH | Life/Health |
| M&A | Mergers and Acquisitions |
| Mn | Million |
| P/B | Price-to-Book |
| P/E | Price-to-Earnings |
| PC | Property-Casualty |
| PT | Price Target |
| ROE | Return on Equity |
| SB | Supervisory Board |
| T | Trillion |
| US | United States |
| YE | Year End |
| YoY | Year on Year |

ISEG Lisbon School of Economics & Management Universidade de Lisboa

# Allianz SE
## HOLD
Medium Risk
7th June 2023
Xetra

# Allianz SE: We secure your future

(YE2024 Price Target of € 237.44 (+13.7%); recommendation is HOLD with Medium Risk)

## 1. Research Snapshot

Allianz has a HOLD recommendation with a Price Target of €237.44 for 2024YE with medium risk (Table 1), using the Residual Income model for the forecast time period of 2023-2027F, implying an upside potential of c.13.7%, and an annualized return of c.8.93% for the next 18 months, from its closing price of €208.85 on 7th of June 2023 (Figure 2).

According to their strategic plan for the 2021-2024F period, Allianz is set to reinforce its global market presence. This has already begun with heavy investment in Europe, including the acquisition of Aviva Poland for €2.5 Bn and Aviva Italia for €330 Mn. Additionally, Allianz expanded its presence in the general insurance business in East Africa by acquiring a 66% stake in Jubilee Holdings. These efforts have helped propel the company's Property-Casualty and Life/Health businesses, with Allianz surpassing the industry premium growth of Property-Casualty in 2022 by 228 basis points. For the 2023F-2027F period, Property-Casualty is expected to have a premium earned CAGR of 2.03% and Life/Health a premium earned CAGR of 1.51%, emphasizing the growing awareness of personal risks and expected growth for EMEA (Europe, Middle East and Africa), where Allianz has a strong presence. However, opportunities in the Asian Pacific and LATAM market are not being overlooked, as Allianz also has a presence there.

Allianz's strong brand reputation and customer loyalty were not impacted by the developments of Structured Alpha, where Allianz was found guilty and fined $6 Billion. Results showed an increase in Assets under Management from 2020-2021, where the value increased from €2.389 trillion to €2.609 trillion. However, this value decreased again to €2.141 trillion in 2022 (approximately 17.9% YoY), due to negative effects from markets and dividends. With an expectation of stabilization in the financial markets, especially interest rates, which are going to perform changes to bond yields and refresh the fair value of assets, the asset management business is set to potentially return to normal returns. Additionally, with the company's vision to integrate some of the segment skillset, such as risk assessment, and investment strategy into the life/health segment, this can provide a higher level of return and lower operational costs for the life/health business.

Since 2017, Allianz has distributed more than €38 Bn in total dividends and share buybacks. The company is expected to continue this trend with an active share repurchase program until 2025, to buy up to 10% of the share capital. It is anticipated that Allianz may distribute up to €37 Bn in dividends and share buybacks (Figure 3), providing a probable upside potential for the value of the company from the management's perspective.

Table 1. Risk Assessment

| Low | Medium | High |
|---|---|---|

Figure 1. Market Data

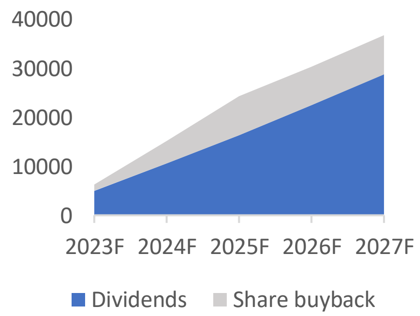
| INVESTMENT RECOMMENDATION | |
|---|---|
| Price Target (2024YE) | 237.44 |
| Upside | 13.69% |
| Annualized return | 8.93% |
| Closing Price (Jun 07, 2023) | 208.85 |
| Stock Exchange | Xetra |
| Industry | Insurance |
| Ticker (Refinitiv) | ALV.DE |
| 52w Price Range(€) | 151.38-217.00 |
| Shares Outstanding (in Mn) | 403.31 |
| Market Cap | 84232.12806 |
| Free Float | 100% |

*Source: Thomson Reuters, Author Analysis*

Figure 2. Price Performance


*Source: Thomson Reuters, Author Analysis*

Figure 3. Total Payout (in Mn)




*Source: Author Analysis*

## 2. Business Description

Allianz SE (Allianz) is an international German insurer focused on providing property and casualty insurance, health and life insurance and asset management, serving more than 122 million clients in over 70 countries (Figure 4) and employing more than 159,000 employees (Figure 5).

Figure 4. Allianz' global presence

*Source: Company's website*

Figure 5. Allianz' Highlights


*Source: Company's website*

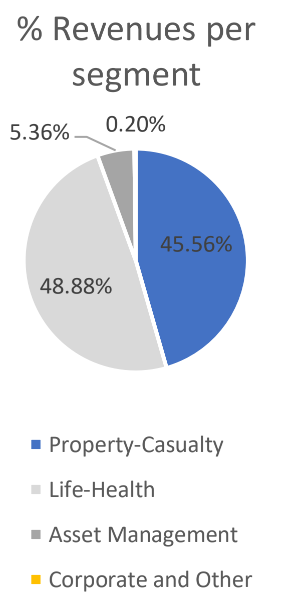
### Company history

Allianz was founded in 1890 in Berlin, starting its operations as a transportation and accident insurer. In 1893, Allianz opened its first international office in London to fulfill the demand of German customers seeking for its services abroad, followed by openings in the USA, the Netherlands, Scandinavia, Italy, Belgium, France, and the Balkans. In 1973, Allianz becomes Europe's largest insurer for the first time, positioning in the top ten largest insurers globally (Allianz, 2023). In 1998, Allianz broadens its product portfolio by introducing asset management and banking services. Later in 2006, Allianz merged with Italian insurer RAS Holding S.P.A. changing its legal form to a European Company, known as **'Societas Europaea'** (SE). In 2021, Allianz acquired the operations of AVIVA Poland and AVIVA Italia, reinforcing their market presence in the European region. And later in 2022, the acquisition of Jubilee in East Africa, expanded their presence even further in markets such as Uganda, Burundi, Tanzania, Mauritius and Kenya.

### Operational Segments

Allianz operates and separates its operations into four different segments: Property-Casualty, Life/Health, Asset Management and Corporate and Other.

Figure 6. Revenues per segment FY2022




*Source: Company's data, Author analysis*

**Property-Casualty (PC)** – deals with the protection of property and provides coverage for various liabilities, it includes auto, accident, general liability, fire and property, legal expense, credit, and travel insurance. PC represented c.46% of the revenues in FY2022 (Figure 6). It generated an operating profit of c.€6.2Bn. This is an increase of c.8% YoY mostly driven by a higher operating investment income due to higher interest rates and a strong underwriting result. Despite the increase in the combined ratio by 50 bp to 94.2%, there was an overcompensation by the premium growth with relevant highlight from performances of Allianz Partners (+23.6%), Turkey (+126%) and AGCS (+8.3%). This was essentially due to rises in the consumer price index and volume effects.

**Life/Health (LH)** – focuses on providing coverage for risks related to human life and well-being, it includes annuities, endowment and term insurance, unit-linked and investment-oriented products, as well as full private health, supplemental health, and long-term care insurance. LH represented c.49% of the revenues (Figure 6), generating an operating profit of c. €5.3Bn in FY2022, this is an increase of 5.4% YoY, mainly due to positive effects from the acquired Aviva operations in Poland and higher realized gains in Benelux as well as positive true-up of deferred acquisition costs in Germany. In terms of Present Value of New Business Premiums, it suffered a major negative impact of c.- €12.9Bn, now accounting to c.€69.6Bn, consequence of lower single premium business in the business with capital-efficient products in Germany, a decrease in sales of unit-linked products in Italy of 20.7% and the effect of the discounting rates from the higher interest rates.

**Asset Management (AM) –** focuses on providing institutional and retail asset management products and services and other assets to third-party investors. It also provides investment management services to the Allianz Group's insurance operations. AM represented c.5% of revenues, totaling c.€3.1Bn of operating profit in FY2022 (-8.31% YoY). This development occurred due to a combination of lower performance fees and decreased revenues from Assets under Management (AuM), mainly due to the negative market effects that were worse than expected.

**Corporate and other -** includes the management and support of the Allianz Group's businesses through its strategy, risk, corporate finance, treasury, financial reporting, controlling, communication, legal, human resources, technology, and other functions. It represented 0.2% of revenues (FY2022).

## Drivers of Profitability

Allianz, like other companies in the insurance industry, faces two key drivers of profitability that have an impact on its ability to manage revenue and costs.

**Underwriting margins –** It is the return yield by the difference between the premiums paid by the policyholders and the claims that are paid out. This factor heavily influences the profitability of the company when, for instance, the claims are abnormally higher than usual while having constant or lower premiums than normal, diminishing some of the returns. Or when trying to retain market share, they lower their margins but don't account for the risks that may incur.

**Investments income –** It comes from the asset management done by the company, using the reinvestments of the premium value of the insurance or third-party services with the objectives of generating additional income and protecting and hedging the positions of future claims provisions.

## Strategy

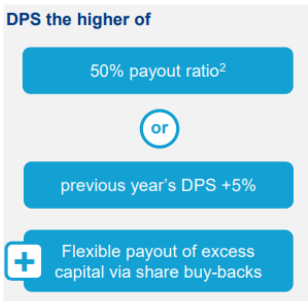
Figure 7. Strategic objectives


*Source: Company's website*

Allianz is looking forward to **reinforcing its market presence** by expanding its Property & Casualty insurance segment to build economies of scale, not only in the retail motor but also in its other areas of coverage.

Allianz seeks to **upgrade its Life/Health insurance**, trying to reach higher cost efficiency and risk awareness, by utilizing and synergizing its capabilities from its Asset Management segment and increasing market shares in Protection and Health.

Figure 8. Dividend policy




*Source: Company's website*

Allianz intends to **develop innovative ways to distribute and offer its services** so that it can reach more customers worldwide and increase its business volume and margins.

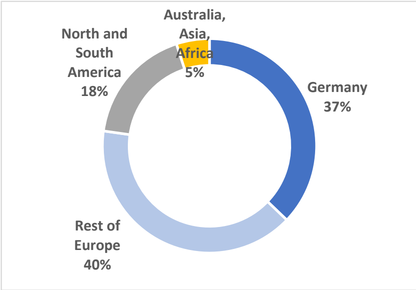
It aims to be a resilient company by **investing in workforce** diversity and in-house development of skills.

To keep its shareholders invested in the company, Allianz wants to offer from year 2021 onwards, a regular payout of 50% of its earnings, adjusted for extraordinary and volatile items, or if a 5% increase YoY of the dividend per share (DPS) is greater than the payout, this will be the one offered (Figure 8), subject to a Solvency II capitalization ratio above 150%. Additionally, Allianz has a plan to repurchase until May 3, 2025, treasury shares in an amount of up to 10% of the capital stock. This is a plan that has been ongoing since 2017 and it is on the promise of distributing excess cash, which is, alongside the investment in M&A deals, a way to create and strength brand power.

### Shareholder Structure

As of 2022YE, Allianz shares were held 100% in free float. The structure analysis demonstrates a weight of 74.4% being Institutional Investors and 25.6% Private Investors. 87% of the ownership is from investors from Germany and Rest of Europe (Figure 9).

Figure 9. Shareholders location




*Source: Company's website*

## 3. Environmental, Social and Governance

Allianz keeps presenting great ESG performances in terms of industry classification throughout the years that are acknowledged by entities such as MSCI[1] (AA rating) (Figure 10), DJSI/S&P[1] (99th percentile), Sustainalytics[1] (6th percentile in the insurance industry) and a rating score of 91.69 out of 100, ranking 2/195 in the industry based on Reuters[2] (Figure 11).

### Environmental

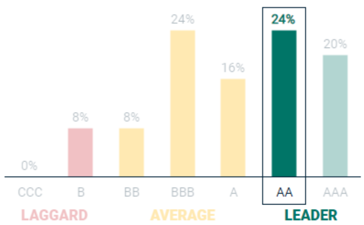
As continuous concerns and commitment to limit global warming, Allianz demonstrated its increasing ambitions to pursue a net-zero world in COP26[3], where it is a founder member of U.N.-convened Net-Zero Asset Owner Alliance, stablishing goals of decarbonization of investments up until 2050 (Figure 12).

Furthermore, Allianz is determined to use its experience acquired in climate risk management and insurance expertise to assist different industries and customers.

Additionally, as of 2023, the PC segment have added restrictions on oil and gas investments as well as engagement with companies in proprietary investment to move away from coal.

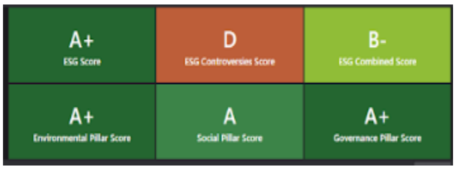
In terms of numbers, this commitment of Allianz for a sustainable future represented a 12% increase YoY in 2022 of usage of renewable electricity (77% in 2022), 57% reduction in greenhouse gas emissions per employee with an outlined target for 2025 of 50%, 47% reduction in emissions from business travels and 43% reduction of paper use.

Figure 10. MSCI ESG RATING




*Source: MSCI*

Figure 11. ESG Score per pilar

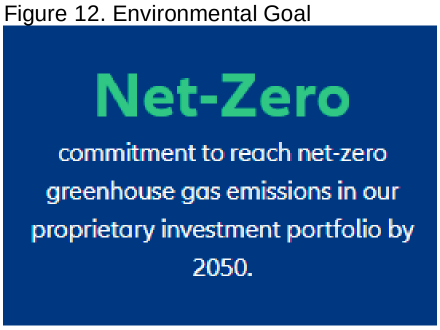



*Source: Reuters*

### Social

As for social impact, Allianz has contributed over €42.8 million for local communities, a significant increase YoY, of which it includes a €10 million donation for the humanitarian efforts in Ukraine (€28.2 million in 2022). In the beginning of 2023, Allianz made a donation of €6 million to support relief and recovery efforts for the earthquakes that hit Turkey and Syria.

Figure 12. Environmental Goal




*Source: Company's website*

Moreover, the loyalty of the clients to the company has surpassed expectations, reaching 58%, for an underlined target for 2024YE of 50%, using the globally

[1] Source: Company website
[2] Source: Refinitiv Reuters
[3] UN Climate Change Conference

recognized digital Net Promoter Score that allows to measure continuously, eliminating seasonality the costumers' willingness to recommend Allianz.

## Management and Corporate Governance

The company follows the Germanic Governance Model in accordance with Sec.161 of the German Stock Corporation Act which ensures that Supervisory Board (SB) and Board of Management (BM) remain bona fide towards shareholders, through an Annual General Meeting (GM) being the main form of direct communication. (Figure 13)

Allianz SB consists of 12 members and is composed of six shareholder representatives and six employee representatives elected at the GM.

It has the function of overseeing and advising the BM on managing the business and it is also responsible for appointing the members of the BM, determining their overall remuneration, succession planning for the BM, and reviewing the annual financial statements.

Allianz Supervisory Board is comprised of Standing Committee, Audit Committee, Risk Committee, Personnel Committee, Nomination Committee, Technology Committee and Sustainability Committee.

### Board of Management

The main responsibility of the BM is to set the business strategy and goals, coordinate and supervise the operating entities, and to implement and oversee an efficient risk management system, being also entitled to prepare, and present the financial reports.

As of 1 January 2022, Allianz adopted a policy where it clarifies the number of Board members being 11 (Table 2) and required to be younger than 62 years old.

Mr. Oliver Bäte has been the CEO of Allianz since 2015, first appointed in 2008 as COO and 1 year after CFO. Before joining Allianz, he was the Director Leader of the European Insurance and Asset Management Sector at McKinsey & Co Germany, with a career of more than 20 years of experience in the industry.

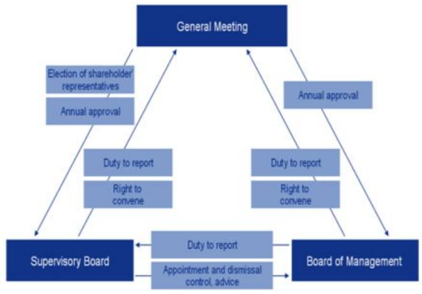
### Gender equality

According to paragraph 16 (2) and paragraph 17 (2) of German SE Implementation Act, German companies must ensure that the BM includes at least one female and at least one male member when appointing members to the BM and the proportion between men and women must be at least of 30% each among the members of the SB. This legal requirement is currently being met by Allianz SE, following its gender structure goal for 2024 (Figure 14). As of 31 December 2022, the proportion of women on the BM was 27.3% and, in the SB, it included 5 women (41.7%) and 7 men (58.3%).

### Remuneration Policy

The compensation of the BM members consists of a fixed remuneration, comprised by the base salary and perquisites (in 2022, c. € 1.9 million for CEO and €975k for the members), and a variable compensation based on short-term performance, longer-term success, and sustained value creation which includes short-term annual bonus and long-term shared-based remuneration. While the SB members

Figure 13. Corporate Governance Structure



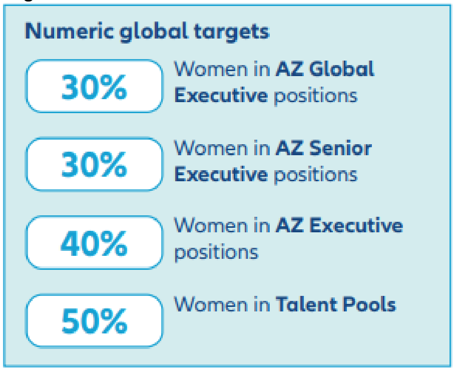

***Source:*** *Company's website*

Table 2. Board Members

| Board of Management | |
|---|---|
| **Oliver Bäte** | CEO |
| **Giulio Terzariol** | CFO |
| **Dr. Barbara Karuth-zelle** | COO |
| **Sergio Balbinot** | Insurance Asia Pacific |
| **Sirma Boshnakova** | Insurance Western & Southern Europe, Allianz Direct, Allianz Partners |
| **Dr. Klaus-Peter Röhler** | Insurance German Speaking Countries and Central & Eastern Europe |
| **Ivan de la Sota** | Business Transformation, Insurance Iberia & Latin America |
| **Dr. Günther Thallinger** | Investment Management |
| **Christopher Townsend** | Global Insurance Lines & Anglo Markets, Reinsurance, Middle East, Africa Iberia & Latin America |
| **Renate Wagner** | Mergers & Acquisitions, People and Culture, Legal, Compliance |
| **Dr. Andreas Wimmer** | Asset Management, US Life Insurance |

***Source:*** *Company's data*

Figure 14. Gender Structure 2024 Goal




***Source:*** *Company's website*

have a fixed remuneration (€250k for Chairperson, €187.5k for Vice Chairperson and €125k for regular members), and an additional committee-related remuneration and Attendance fees and expenses are also credited.

**Controversies**

The U.S. asset management of Allianz admitted to criminal securities fraud and agreed to pay more than $6 billion in relation to the collapse of the Structured Alpha fund in March 2020 amid market volatility. The portfolio manager at the core of an investment fraud at Allianz's U.S. funds division used its reputation to lure investors. Allianz Global Investors U.S and three former senior portfolio managers were charged by the U.S. Securities and Exchange Commission (SEC) of engaging in a massive fraud scheme by hiding the significant downside risks associated with a complex options trading strategy they dubbed "Structured Alpha." Although this big litigation case provoked losses on the books of Allianz, the impact on value creation and trust of its clients was not affected, which can be proved by the persistence of good results, not only on the main concerned Asset Management segment but also the company as a whole.

## 4. Industry Overview and Competitive Positioning

### World GDP Growth

Global GDP growth slowed in 2022 to 3.2%, after a rebound from the pandemic in 2021 of 6.0% (Figure 15), affected by the difficulties in the supply chain and energy supply constraints mostly owing to consequences from covid policies in China and the crisis between Russia and Ukraine, rising interest rates and high inflation.

In 2023, GDP is expected to slow down further to 2.6% due to the great impacts of 2022 (Figure 15). However, there is a positive sign that this may be better than expected. The economic activity and labor market (Figure 16) in the main G20 economies have improved due to the decrease in energy and food prices (Figure 17) although it is still fragile in emerging economies such as Argentina where inflation rates have hit more than 100% in early February 2023 and finally China’s full reopening is expected to have a positive impact. In 2024, the global economy is expected to grow by 2.9% due to measures taken by various nations to reduce policy interest rates (Figure 15). However, this growth rate is the lowest since 2001, with the exception of the global financial crisis and the initial phase of the COVID-19 pandemic.

### World Population growth

From 2016 to 2021, the global population grew at a CAGR of approximately 0.96%, increasing from 7,357 million to 7,718 million (Figure 18). In the period from 2022 to 2028, it is expected that the population in advanced economies will stabilize at a CAGR of approximately 0.33%, while the population in Emerging markets and Developing Economies will continue to increase at a CAGR of 1.05%. Overall, the global population is projected to reach 8,237 million by 2028.

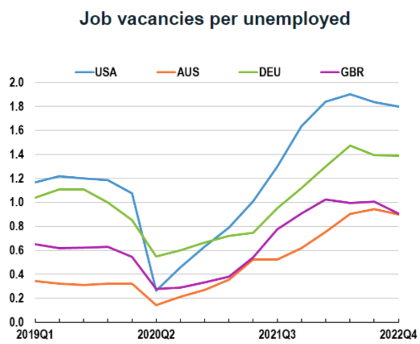
### Interest rates

To combat inflation, Central Banks often tighten monetary policy and raise real interest rates. As of the first quarter of 2023, the Federal Reserve's interest rates ranged between 4.75% and 5.0%. In Europe, rates were around 3.50% and are expected to reach 4.1% by the end of 2023. (Figure 19)

Figure 15. Forecasted GDP Growth

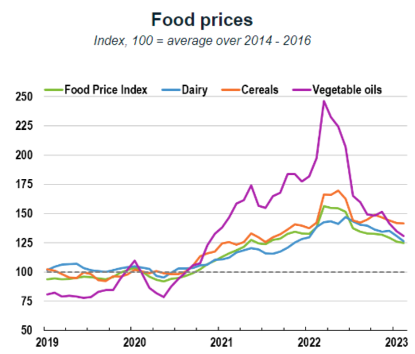

***Source:*** *OECD*

Figure 16. Job vacancies per unemployed




***Source:*** *OECD Short Term Labour Situation database; Eurostat; and OECD calculation.*

Figure 17. Food Prices




***Source:*** *FAO, OECD Interim Economic Outlook 113 database.*

Recent events, such as the collapse of US Bank Silicon Valley Bank and Credit Suisse have had a ripple effect on the global banking system. These events have eroded confidence in financial services and raised questions about how companies secure cash. The Central Banks have intervened to prevent clients from losing money and to avoid another financial crisis. However, this intervention may lead to a decrease in interest rates in the short to medium term.

## Consumer price Index

In the world's main advanced economies, headline consumer price inflation is anticipated to decline, with a global rate anticipating a reduction from 8.1% in 2022 to 6.1% in 2023 and 4.1% in 2024 (Figure 20). This is as a result of tighter monetary policies being put in place, an easing of demand pressures, and a normalization of transportation costs and delivery times.

The rate of decline, however, will vary between countries. Because energy costs have a large impact on inflation and economic growth in Europe, in particular, energy markets and stored energy levels are important factors in establishing these values (Figure 21).

## Evolution of insurance

### Europe

Concerning the development of written premiums, on European Life and Non-Life insurance it was recorded a positive CAGR of 2.75% and 6.01%, respectively, from 2017 to 2021. This suggests that the non-life sector has been growing more rapidly than the life sector (Figure 22). The difference in volume of premium written from Life to Non-life can be essentially explained by Life being a cornerstone vehicle for long-term savings in all major European countries.

### United States

Contrary to what is confirmed in the EU, the non-life sector in the US is noted to generate more premiums than the life sector between 2017 and 2021 (Figure 23), with a difference between them of $0.48 trillion. The non-life sector's CAGR increased by c.0.45%, while the life sector's CAGR rose by 8.19%, indicating that the previously noted disparity was considerably wider in the past. The increase in life sales can be explained by the insecurity of the US population on their long-term savings and the US pension plan system overall.

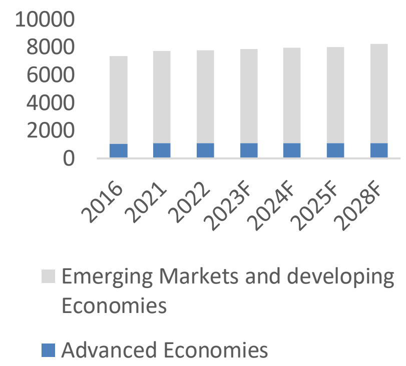
### China and India

The 2 economies are most of the times a proxy for the analysis of emerging markets as at all, thus the utilization of industry numbers of these 2 countries (Figure 24) will also be considered to generalize the growth of insurance in these markets, since there is no precise disclosure of the Asian panorama. From 2017 until 2021 it is visible an increasing demand for protection of risk, and as the 2 world biggest population countries, this represented a CAGR of 3.84% and 4.74%, respectively. It is also visible how small the market is and its potential to grow to numbers of western countries.

### Global outlook

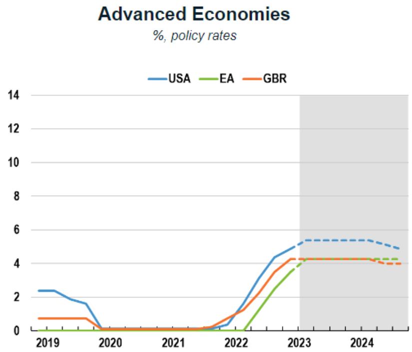
In 2022E, non-life premiums experienced a global increase of 0.9%, with positive growth in all markets except for the EMEA region (Figure 25). The EMEA region

Figure 18. Global population projections (in Mn)



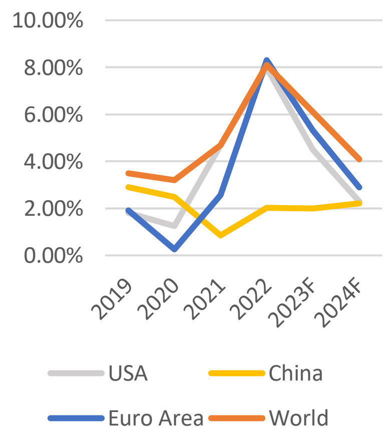

*Source: IMF*

Figure 19. Policy rates



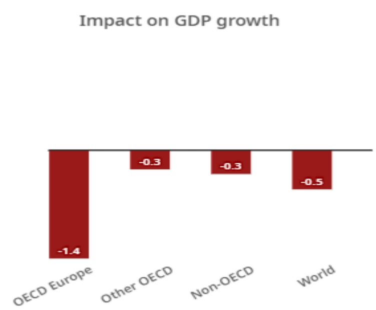

***Source:*** *OECD Interim Economic Outlook 113 database.*

Figure 20. Forecasted Inflation




***Source:*** *OECD, IMF*

Figure 21. Impact of further energy price hikes on GDP growth




***Source:*** *OECD*

experienced a decrease due to the Ukraine-Russian military conflict's impact on demand and supply chains, as well as increased prices for essential commodities, which hindered people's ability to invest. Future projections indicate a slight shortage in most regions, but most economies are expected to remain close to the 2% mark without falling into negative values.

The region that stands out most with respect to forecasts when compared to historical 5Y is Asia Pacific that is expected to turn positive with comfortability.

In 2022E, a worldwide decrease of 1.9% CAGR is expected in life insurance (Figure 26), with advanced markets from Asia-Pacific (such as Japan, Australia, New Zealand, Hong Kong, and Singapore) and EMEA being the main influences on this indicator. In contrast, emerging markets (excluding China) have continued their growth trend and presented an increase of 2%, with a forecast of 5% in 2023-24F. The global market is forecasted to develop at almost 2% CAGR. This confirms that the growth in emerging markets offsets the decreases in EMEA and Asia-Pacific and still presents projections for growth.

In 2021, as countries recovered from the Covid-19 pandemic, an increase in total gross written premium was observed for the majority of countries. At the line of business level, Index-linked & unit-linked business saw the highest increase (Swiss Re, 2022).

## Solvency II

Since the 1st of January of 2016, the E.U. implemented a framework of new regulations regarding solvency requirements and risk mitigation for insurance companies called Solvency II to ensure the adequate protection of policyholders and beneficiaries. This regulation defines the amount of funds and assets, considering the risk of investments and its liquidity, that an insurer needs to hold to withhold the most adverse scenarios and losses with a 99.5% confidence interval. Additionally, this framework set governance, transparency, risk, and reporting regulations for the E.U. insurance companies. Lastly, a risk margin is computed that consists of the difference between the technical provisions and the best possible estimate of the liabilities.

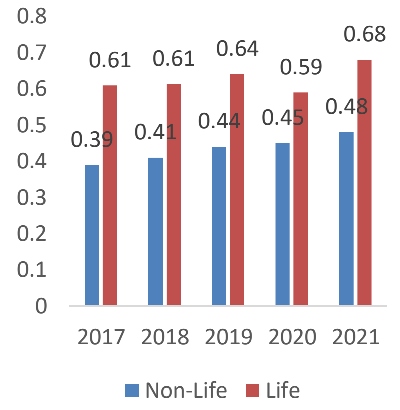
Regarding the rising interest rates, these values will decrease the present capital requirements due to a higher discount rate, however due to higher interest rate risk the overall value of capital requirements should also increase.

## Demand and supply

**Demand Drivers**

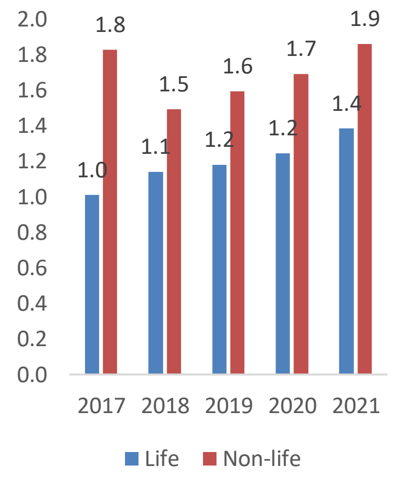
**Legal Requirements & Economic Outlook**
Insurance plays a crucial role in providing individuals and their families with protection against unexpected emergencies, such as accidents, illnesses, and unfortunate events like death. It offers financial security by spreading out significant expenses into more manageable payments. Insurance also promotes long-term financial stability by encouraging savings and helping secure retirement plans. In some situations, such as for motor vehicles and property, insurance is required by law. People should consider insurance for the comfort of being protected especially

Figure 22. EU Net Written Premium( in T€)



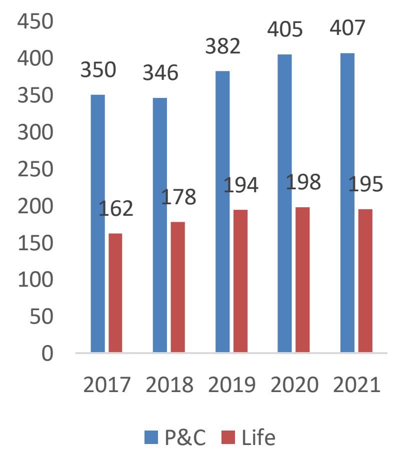

***Source:*** *OECD*

Figure 23. US Written Premium (in $T)




***Source:*** *OECD*

Figure 24. China /India Written premium (in B€)




***Source:*** *Allianz Research.*

given the current economic outlook of uncertainty, increasing prices, and unforeseen events.

### Demographics & Product Innovation

As the population ages, lifestyles change and household composition changes, there may be an increasing demand for health insurance and retirement pensions. Additionally, with evolving consumer's needs, for example cybersecurity, in a market where competition is fearless, new products can influence new types of demands.

## Supply Drivers

### Costs for claims coverage services

The cost of each claim and the resources required to resolve specific issues primarily affect the supply of insurance. These costs may include expenses related to healthcare providers, car repair shops, property repairs, and specialized procedures. An unexpected surge in inflation can cause these expenses to increase, potentially harming the financials, profitability, and revenues of insurance companies if premium prices are not adjusted quickly enough. While significant changes in policy quantity are not expected, changes in supply could have a greater impact on prices than changes in demand, e.g., if there is a change in the availability of insurance policies, it can lead to a tighter market and higher prices, moreover insurance is often seen as a necessity which makes the policyholder willing to pay a certain value even if the price increases.

### Distribution Channels

Insurance companies use various methods to reach customers and sell their products. These methods include agencies, brokers, partnerships, financial advisors and aggregators. Each of these entities plays a unique role in the distribution of insurance products.

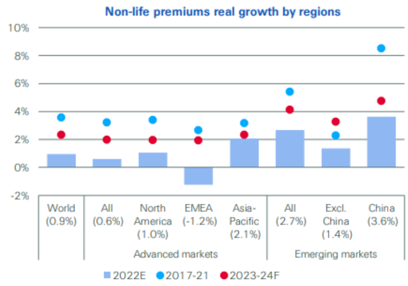
For example, agents may be employed by a single insurance company or may represent multiple companies as independent agents. Brokers serve as intermediaries between customers and insurance companies, helping customers find the best coverage for their needs. There could be partnerships, such as banking partnerships, where the bank has a deal with an insurance company to sell exclusively their brand, e.g. Allianz and Revolut deal[4], and so on. Depending on the method chosen by the insurer, the income may vary, and the potential creation of value can be different.

## Mergers & Acquisitions

Globally, the number of deals in the insurance industry between companies from different countries has increased by 33.3% from 2016 to 2021 (Figure 27). For 2023, due to the global instability in the economic and political landscape it is expected to drive and increase the volume of cross-border deals, as companies seek for new approaches on emerging markets and new products as well as capital efficiency for their value chain.

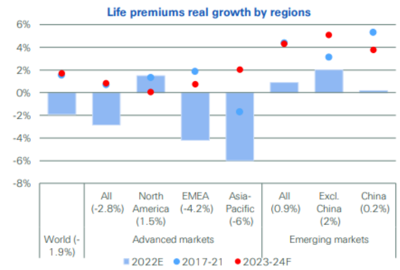
Companies in the life insurance market across all regions are anticipated to keep selling off non-core company portfolios in order to re-direct funding and concentrate

Figure 25. Non-life premium real growth



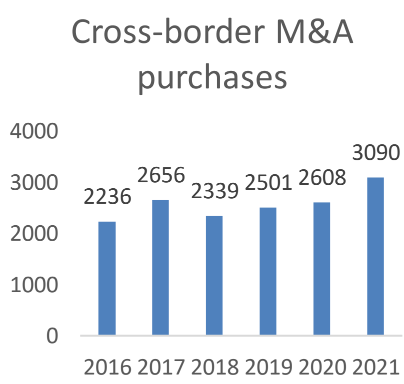

***Source:*** *Swiss Re Institute.*

Figure 26. Life premium real growth




***Source:*** *Swiss Re Institute.*

Figure 27. M&A Deals




***Source:*** *Statista, Author Analysis*

[4] Allianz and Revolut partnered in April of 2022 to offer travel insurance to Revolut clients within their app.

on core product offerings or advance technological capabilities (Mckinsey & Company, 2023).
In order to speed up digitalization, composite insurers who are struggling with outdated technology may attempt to purchase or partner with Insurtech firms.

### Trends

**Digital Transformation**
Distribution has long been the source of value creation for insurers, and it will remain so. However, with the rapidly accelerating digitalization of global business operations across industries and rising consumer service standards, the industry cannot fall behind. In addition, the emergence and rapid growth of InsurTechs poses a threat to the traditional model (Deloitte, 2023; Mckinsey & Company, 2023).

**Awareness of personal risks**
With the recent global pandemic, more and more people who previously had little or no interest in protecting their personal risks, health, and life insurance have started to slowly realize how problems with public health and retirement pensions may affect them in the future. As a result, demand for life and health insurance has increased, providing opportunities for insurers (Deloitte, 2023; Mckinsey & Company, 2023).

**Sustainability**
Insurers should be moving toward a higher standard of environmental, social, and governance as a way to set themselves apart from one another, impose more goals, and actively seek out new opportunities. This applies not only to investments like green bonds, but also to how they approach addressing climate change, diversifying their workforce, increasing inclusivity, and improving the transparency of their governance models.

**Reshape of investments**
The investments have recently[5] been offered at low interest rates, and since interest rates are expected to stay high in the near future to combat rising inflations, this will present an opportunity for insurance companies, particularly those in the life sector, with higher reinvestment rates of their investments. These companies can benefit from higher asset rotation than liabilities, which will ultimately result in a higher spread and a better investment outcome.

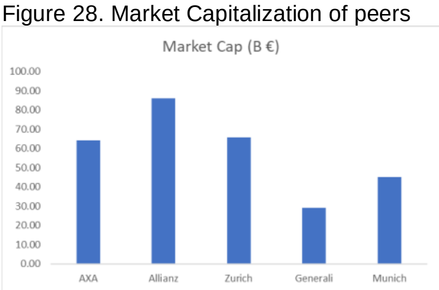
## Competitive positioning

### Peers Analysis

To reach the group of Allianz' peers, it was identified mainly European companies that had relative high distribution of their services in the region.

Besides that, it was also performed an analysis on regions that Allianz operates in, such as the regions of EMEA, Latin America, North America and APAC and offer similar lines of business to which Allianz operates in (Property & Casualty, Life & Health, Asset Management, and Business Insurance).

Figure 28. Market Capitalization of peers




***Source:*** *Author Analysis.*

[5] From June 2014 to September 2022, Europe assisted a period of negative or close to 0% interest rates.

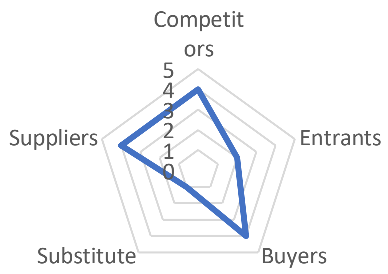
Moreover, to have a further detailed comparison, we compared multiple companies using factors such as Market Capitalization, Revenues, Assets, Employees, Customers, Solvency Ratio, Combined Ratio. Summarizing, Allianz' peers' group is molded by AXA, Generali, Zurich and Munich Re (Figure 28) (Appendix 12), which presented combined ratios between 93.2% and 96.2% and comfortable solvency ratios between 201% and 265% (Figure 29) to the required 150% defined by European Insurance and Occupational Pensions Authority.

Figure 29. Peers Analysis

| Company | *Combined Ratio* | *Solvency Ratio* |
|---|---|---|
| **AXA** 🇫🇷 | *94.60%* | *215%* |
| **Allianz** 🇩🇪 | *94.20%* | *201%* |
| **Generali** 🇮🇹 | *93.20%* | *221%* |
| **Zurich** 🇨🇭 | *94.30%* | *265%* |
| **Munich Re** 🇩🇪 | *96.20%* | *260%* |

***Source:*** *Author Analysis.*

Figure 30. Porters 5 forces




***Source:*** *Author Analysis.*

## Porter's 5 Forces

**Rivalry Among Competitors: HIGH (4)**

- The insurance sector is characterized by intense competition.
- Several prominent companies, comparable in size and influence, operate within the industry.
- The sector also sees participation from government programs, risk retention groups, and self-insured entities as competitors.
- Market shares are fiercely contested due to sluggish growth in the sector.
- Insurers face the challenge of distinguishing themselves amidst minimal product differentiation and regulated prices.
- To stand out, insurers must explore avenues such as enhancing policyholder services and implementing impactful advertising campaigns.

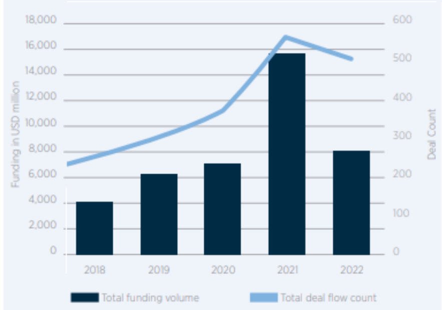
**Buyers Power: HIGH (4)**

- Corporate clients with substantial premium payments hold significant bargaining power.
- The widespread use of the internet and easy access to information empower individual policyholders.
- With access to instant knowledge about coverages, pricing, and services, customers can demand personalized attention.
- Customers can easily switch to competitors without facing substantial switching costs if their expectations are not met.
- This dynamic limits the industry's profitability as customers seek greater value and request price reductions, improved payment terms, or additional features and services.
- The presence of high fixed costs and low marginal costs further intensifies the pressure on competitors to maintain capacity through discounting.

**Suppliers Power: HIGH (4)**

- Suppliers have the ability to exert pressure on companies by offering higher-priced services or lower-quality products, or by controlling product availability.
- These actions directly impact the profitability of buying firms, as they are required to pay more and may face switching costs when seeking alternative suppliers.
- In order to maintain profit margins, insurance coverage premiums must be set at higher levels.
- Traditionally, distribution channels such as agents and brokers have had a significant influence on policyholder choices.
- The specialized knowledge required in the industry makes it challenging for insurers to negotiate with these intermediaries.
- However, with the rise of digital platforms and tools, insurers are increasingly able to reach potential customers directly, thereby reducing the bargaining power of distributors.
- This decrease in bargaining power limits the distributors' ability to extract higher profits from companies that are unable to pass on cost increases to their own prices.

Figure 31. Insurtech Funding and deal count




***Source:*** *Gallager Re.*

**Threat of New Entrants: LOW (2)**

- Establishing a presence in the market and capturing market share poses significant obstacles for potential new entrants.
- The emergence of InsurTech is gradually introducing new players, partnerships, and innovative operating models (Figure 31).
- Advanced underwriting products driven by technology and the adoption of usage-based insurance (UBI) facilitate seamless integration.
- This dynamic opens up potential opportunities for tech-driven enterprises like Amazon and Google to enter the industry.

**Threat of Substitutes Products: VERY LOW (1)**

- In the insurance industry, the presence of substitutes has been minimal since the demand for insurance is stable and consistent.
- The alternative to obtaining insurance would involve assuming personally the risks associated with the coverage provided by insurance.
- Due to limited differentiation, the influence of this force on companies in the industry remains relatively weak.
- While innovation and service advancements occur, they should be regarded as enhancements to service offerings rather than substitutes.

## Swot Analysis

Figure 32. Swot Analysis

| Strengths | Weakness |
|---|---|
| • Diversified Business Portfolio: Including Asset Management and Banking services to the main insurance line;<br>• Global Presence and Strong Brand reputation;<br>• Strong financial position, presenting a 202% SII in 2022 above the threshold of 180% set by the company and top credit ratings. | • European market represents a high percentage of the revenues, which exposes itself to regulatory and economic risks;<br>• Concentration risk;<br>• Complex organizational structure, with many subsidiaries and affiliates. |
| **Opportunities** | **Threats** |
| • Increasing demand for insurance services due to global economic growth and risk protection;<br>• Digitalization and innovation of costumer's experience;<br>• Emerging markets, such as LATAM and Asia Pacific. | • Fierce Competition, especially from new entrants with new and innovative ways of distribution such as Insurtechs;<br>• Economic and regulatory risks;<br>• Cybersecurity risks;<br>• Market risks such as interest rates, unexpected inflation, exchange rates;<br>• Natural Catastrophes;<br>• Fraudulent cases. |

Source: Author Analysis

## 5. Investment Summary

Allianz has a HOLD recommendation with a Price Target of €237.44 for 2024YE, implying an upside potential of c.13.7% of its closing price of €208.85, corresponding to an annualized return of c.8.93%, as of 7th of June 2023, with a medium investment risk. The current company's undervaluation is due to the following key pillars:

**Interest rates turnaround**

As interest rates rise above zero and are expected to continue increasing, Allianz's overall investment income is set to improve. The LH segment stands to benefit the most due to its longer-term investments, despite a slight decrease in the value of current contracts due to higher refresh rates. This resulted in a decrease of 84 bps from 2021-2022, and with an expectation to grow 91 bps from 2022-2027F. The PC segment will also see a positive impact, with an increase of 8 bps from 2021-2022, due to its shorter-term investments, and expectation to maintain to values previous to pandemic years.

Table 3. Allianz 2022 Goals achievement

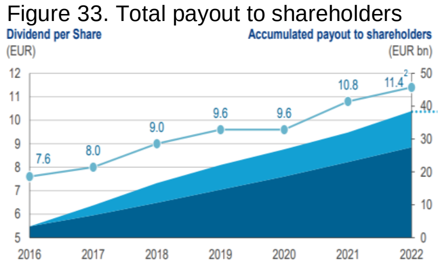
| | Outlook 2022 | Results 2022 |
|---|---|---|
| **Allianz Group** | EBIT €13.4 ± 1Bn | EBIT €14.2 Bn |
| **Property-Casualty** | EBIT €6 Bn ± 10% | EBIT €6.2 Bn |
| **Life/Health** | EBIT € 4.8 Bn ± 10% | EBIT €5.3 Bn |
| **Asset Management** | EBIT € 3.4 Bn ± 10% | EBIT €3.2 Bn |

***Source**: Author Analysis*

**Cost efficiency in the business model and sustained growth**

Allianz has a good track record of surpassing its targets every year (e.g., Table 3). As a result, assumptions for loss ratios and expense ratios have been built around the company's 2024 forecasted targets, assuming that it continues its pricing actions and provisions management from 2022. In that year, the combined ratio increased by 40 bps but remained lower than its peer group, despite high inflation rates and market turmoil. Allianz's EBIT is expected to grow at a 5-year CAGR of 6.20%, driven by growth in premiums that have historically been close to the industry average. As a result, premiums are expected to grow at the same pace as the industry, with an average spread of 351 bps for Property and Casualty and 302 bps for Life and Health.

Figure 33. Total payout to shareholders




***Source:** Company's website.*

**Dividend Policy and Share buyback program**

Allianz is committed to returning excess cash to its shareholders in order to maintain their interest in the company. This is being done through a share repurchase program that was introduced in 2017, as well as a fixed minimum payout of either 50% or the previous year's dividend per share plus 5%, introduced in 2021. Over the past 7 years, this has resulted in a payout of over €38 Billion (Figure 33) and it is expected to continue to at least 2025F.

Table 4. Allianz Price Target

| Valuation | 2024YE Target Price |
|---|---|
| Residual Income | 237.44 |
| DDM | 243.56 |
| Predicted P/B | 236.47 |

***Source**: Author Analysis*

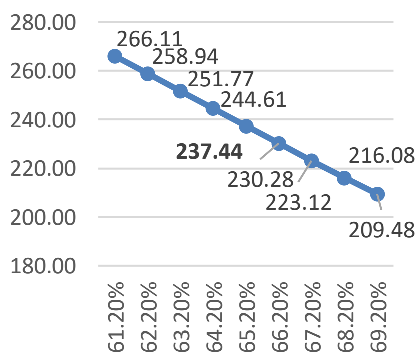
### Valuation Methods

To reach the final Price Target, The Residual Income was used as the base model, first by forecasting the segments separately, followed by a Sum of Parts approach, yielding at the end a PT of €237.44. Second, it was applied the DDM because of the company's dividend policy, observing a PT of €243.56. And lastly, a market approach, through a multiple valuation, where P/B returned €236.47 (Table 4).

### Investments Risks

While Allianz is exposed to several risks, such as adverse financial market developments that may affect the company's solvency and ability to pay dividends, however, the main headwind to our investment recommendation is the underwriting risk in the PC segment. Catastrophic events are difficult to predict and can significantly impact a company's management of claims. In the past 6 years, claims have been rising, which could affect Allianz's expected loss ratio and therefore its value creation (Figure 34).

Figure 34. Price Target Sensitivity to Loss Ratio




***Source:** Author Analysis*

## 6. Valuation

Considering the unique characteristics of the financial services sector, which includes higher leverage ratios and the need to meet minimum capital requirements to address the inherent risks, Allianz was valued using equity valuation methods, including the Residual Income model and Dividend Discount Model. Additionally, a Relative Valuation approach was employed to provide further insights by comparing Allianz's valuation multiples to those of its industry peers.

Table 5. Residual Income Price Target

| Price Target | |
|---|---|
| Equity Invested (in Bn) | 65.87 € |
| PV of Equity Excess Return + Terminal Value (in Bn) | 24.57 € |
| Equity Value (in Bn) | 90.44 € |
| # Shares in Mn | 380.9 |
| Price Target | 237.44 € |

***Source:*** *Author Analysis.*

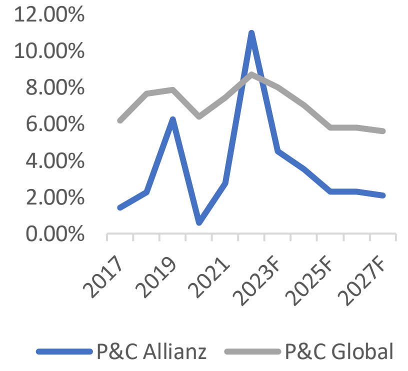
### Residual Income

The residual income model was the base model used for Allianz's valuation. This resulted in a 2024YE Price Target of €237.44 per share (Table 5) (Appendix 10). For the forecast of the earnings, each insurance segment was valued separately summing it all at the end. The same discount rate was used for the whole company. (Please refer to the appendices to a further detailed explanation of the data).

The main drivers for the Residual Income Valuation include:

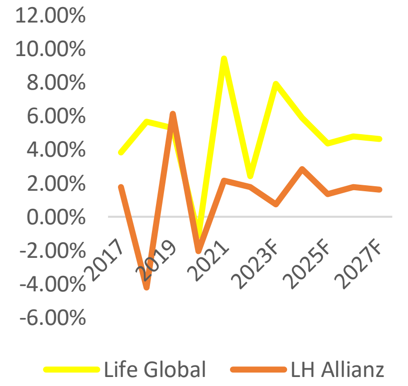
**Premiums Earned |** The segment of PC net premium earned is expected to increase at 2.94% CAGR between 2022 – 2027F, due highly to the company's vision to expand to new markets and constant transformation on digitalization and driven by the resilience shown under adverse market conditions, such as Pandemic and most recently high inflation rates around the world, which can be proven with the results shown above market returns in 2022 of c. 2.28% (Figure 35). On the other hand, we have LH segment expecting a CAGR of 1.66% (Figure 36), following recent trends. The Health segment has seen higher demand for its products owing to rising concerns about personal health and the deterioration of National Health Services worldwide. However, this growth is affected by lower investments in Life products due to diminishing real income.

Figure 35. P&C Premium Growth




***Source:*** *Swiss Re and Author Estimates.*

Figure 36. Life Premium Growth




***Source:*** *Swiss Re and Author Estimates.*

**Investment Returns |** Since mid-2022, there has been an observed and anticipated increase in the yield returns that insurance companies have been experiencing thus so far, expected to increase insurer's assets and income to levels prior to periods of negative risk-free interest rates (Appendix 7). In PC, it is already visible in 2022 an increase of 8 bps due mainly investments being of short-term contracts, on the contrary, LH will only see a recovery later in 2023F of 79 bps, because of typology of its investments and taking advantage of higher reinvestment rates.

**Cost of Equity (Ke) |** The Ke used is a result of CAPM model (Table 6). The levered Beta used for the computation was retrieved from Damodaran's yearly database (Damodaran, 2023), industry being European General Insurance. Risk Free rate was the 10 year German Bund spot rate on the 7th of June 2023, Equity Risk Premium for German market retrieved from the survey done by Fernandez (2023), adjusted with an additional Country Risk Premium, as an average of the countries Allianz is present on.

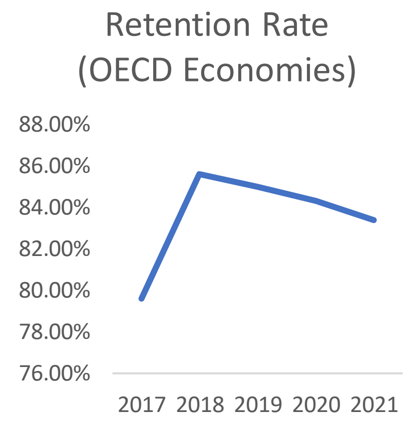
Table 6. Cost Of equity

| Discount Rate | |
|---|---|
| Period | 2022 - 2027F |
| Levered Beta | 0.944524111 |
| Equity Risk Premium | 5.70% |
| 10Y German Bond | 2.46% |
| CRP | 2.68% |
| Cost of equity (CAPM) | 10.37% |

***Source:*** *Author Analysis.*

**Persistence Factor |** Allianz is expected to retain, and potentially increase, a significant portion of its policyholders. This expectation is supported by the company's customer loyalty numbers, which were at 84% in 2021, and by the high retention rates [6] in the insurance industry (Figure 37). As a result, excess returns are projected to continue beyond the forecasted period. The Persistence Factor assumption is 0.8.

Figure 37. Retention Rate of insurance companies in OECD Economies




***Source:*** *OECD.*

### Dividend Discount Model (DDM)

The analysis of the DDM considered a single growth model (Appendix 11). This was due to consistent and growing dividends presented historically. In 2021, Allianz decided to distribute a maximum of 5% over last year's dividend or 50% of earnings. This commits the company to keep investing in its shareholders, making the DDM an adequate valuation model. The model yielded a 2024YE PT of 243.56€, which corresponds to an upside potential of 16.62%, assuming a regulatory compliance by Allianz and with a terminal growth for dividends of 5%.

### Peer Selection

To find the peer group of Allianz it was selected the group of companies based on its geographical location, considering similar indicators, and the ones assumed by Allianz to be its peers. We reached 4 peer companies. (Appendix 12)

### Relative Valuation

To apply this method, we chose specifically 2 equity multiples P/B and P/E, then 2 regressions were performed (Appendix 13). For P/B, the variables used were Return on Equity and 5 year Monthly Beta (Table 7), and for P/E, the variables used were CAGR of last 5 year EPS, Payout and 5 year Monthly Beta.

Table 7. P/B Regression Analysis

| | *Coefficients* |
|---|---|
| Intercept | -0.71198799 |
| Beta 5 year | -0.188215469 |
| ROE | 21.57049593 |

***Source:*** *Author Analysis.*

Therefore, Allianz P/B and P/E appear to be undervalued by the market standards, presenting a predicted 1.26 and 12.0, respectively, representing a 2024YE PT range between €236.47 and €351.30, which is an upside potential of 13.39% and 70.48% respectively.

The disproportionate PT from P/E can be attributed to the lack of information about non-operating profit for the forecasted period, which could affect the overall valuation. As a result, the forecasted price with P/E multiple is not considered relevant for Allianz's valuation.

[6] Retention Rate = Net Premium written/ Gross Premium written

## 7. Financial Analysis

**Underwriting |** Allianz has been demonstrating cost efficient productivity and is expected to continue doing so in the foreseeable future, aligning with strategy of the company in expanding and solidifying its market presence in new and developed markets, with an Expense Ratio of 26.8% (Figure 38). Its Combined Ratio is likely to drop to levels close to industry median of 91.1% median in 2021, following the company's goals to reach a Combined Ratio of 92% by 2024F. In 2022 due to unexpected higher inflation as well as above normal natural catastrophes, the costs related to claims were 11% higher YoY. However, this was still lower (94.2%) than the results presented by its peers who had on average a Combined Ratio of c.94.6% in 2022 (Appendix 15). Assuming that the macroeconomic environment remains stable or in line with the company's risk management predictions, the level of Combined ratio is anticipated to continue for future periods.

**Profitability |** EPS are expected to increase at a CAGR of c.16% while DPS are expected to grow at a CAGR of c.9% rate (Figure 39). This follows the decision of shares buyback and positive projections for future growth. Compared to its peers Allianz has one of the highest payout ratios, with a dividend payout of 69% versus an average 60% for its peers in 2022. Its ROE is expected to be 16.5% in 2027F, meeting its goals of ROE of 13%+ in 2024F.

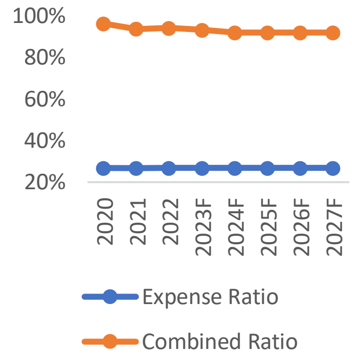
**Solvency |** In terms of financial strength, due to the lack of information on the variables that compose Solvency II and the consequent inability to properly compute it and calculate the Value at Risk of the portfolio, the Net Liabilities to Policyholders' Surplus ratio will be used as a proxy. This ratio explains how much the Loss and Loss Adjustment Reserves or the so-called Provisions to premiums, offset its Policyholders' Surplus, also known as shareholder's equity[7]. According to National Association Insurance Commissioners (NAIC), if the ratio presents values less than 200%, it can be considered healthy for the insurer. This is because it measures whether the company has made sufficient provision to cover all potential claims. If these provisions are insufficient and equity is required to rebalance the losses, it can be detrimental to the company's solvency.

Due to adverse macroeconomic factors in 2022, Allianz decided to increase its ratio by 90 bps., which compared to the median of its peers is still lower (c.270% in 2022). The ratio is expected to decrease slowly in the coming years, reaching a value of 165% in 2027F (Figure 40).

**Asset Management**'s operating profit increased c.22% YoY in FY2021 showing a strong result even after the controversy faced with the litigation on process, demarking a position of leadership in the market, additionally a stabilization of the financial markets after a year 2022 full of volatility, should provide a higher firmness for the sector and thus we forecast a YoY growth of c.6.5% from 2023F- 2027F. As for **Corporate and Other** segment, we expect an increase of c.10% yearly.

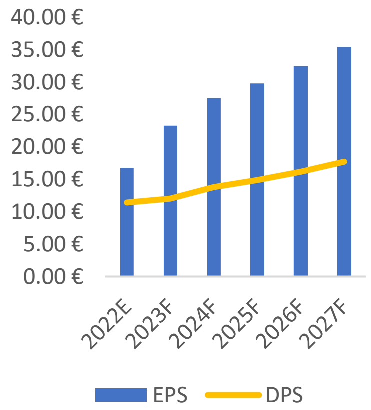
**PC** and **LH** are expected to increase at a CAGR of 4.21% and 4.5% from 2023F-2027F, respectively. (Figure 41)

Figure 38. Underwriting margins



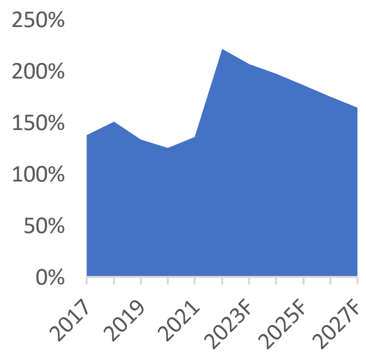

***Source:*** *Author Estimates.*

Figure 39. Dividend Policy



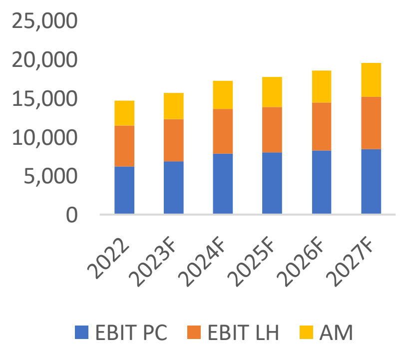

***Source:*** *Author Estimates.*

Figure 40. Net Liabilities to Policyholders' Surplus




***Source:*** *Author Estimates.*

Figure 41. EBIT segmented




***Source:*** *Author Estimates.*

[7] Source: Investopedia

# 8. Investment Risks

## Risk identification and characterization

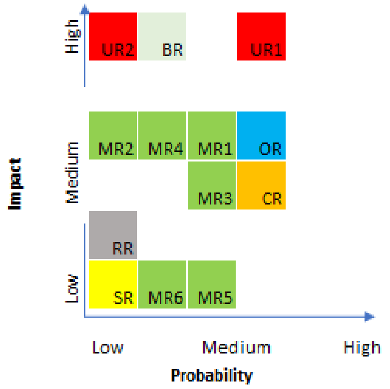
Allianz is exposed to several risks that may impact its business as well as the sector overall, including Market risk, Underwriting Risk, Business Risk, Operational Risk, Credit Risk, Reputational Risk and Strategic Risk. (Figure 42)

Market Risk | Interest rate risk (MR1)
The effects of interest rate fluctuations are high, as Allianz reinvests its maturing asset at lower rates, the duration of the asset will be shorter than the liability contracts, and it will mean a lower guaranteed rate. Reinvestment rates will naturally increase if the interest rate suddenly increases, which will be advantageous for the business.

Market Risk | Inflation risk (MR2)
Being in the insurance industry, Allianz and its peers are normally prepared for changing inflation rates, but unexpected upside turns are difficult to predict and could impact on the pricing of premiums and claims expenses, taking down the profitability of a company.

Market Risk | Equity risk (MR3)
Portfolios includes investment in equity in order to diversify the risk, uncertainty in the equity markets along with a decrease in the shares prices and increase in price volatility may lead to a fall of portfolio.

Figure 42. Risk Matrix




**Source:** *Author Analysis.*

Market Risk | Credit spread risk (MR4)
Risk arising by holding fixed-income assets, where a stretch in the credit spreads may decrease the value of the bonds. This risk most of the time is minimal because insurance companies hold their fixed-income assets until maturity and take advantage of higher spreads to invest in bonds yielding higher than the risk-free return.

Market Risk | Currency risk (MR5)
Derived from international business operations and investment assets, the currency exposure refers to the risk that arises from changes in price of one currency to another. In the case of Allianz, the holding company and its subsidiaries invest in assets that are denominated in the same currency as their liabilities. This can only present a risk to the Group when there is the translation of results for its accounting currency.

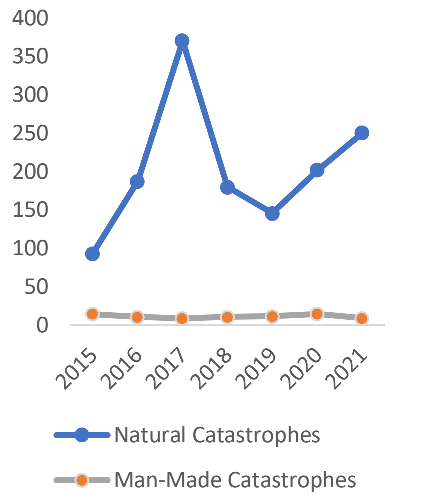
Market Risk | Real estate risk (MR6)
Given diversification, real estate is also considered an asset for the portfolio since it can provide long term returns, the risk that accounts for is of decreasing value.

Credit Risk (CR)
Credit risk is the potential economic loss in the value of Allianz portfolio that would result from either downgrade risk in the credit rating of the bond issuer or default risk, unwillingness of a counterparty to fulfill contractual obligations. In 2022, Standard & Poor's assigned a financial strength rating of AA/Stable to Allianz. This rating falls on a scale that ranges from CCC to AAA, with AAA being the highest. Compared to its peers, who achieved an average rating of AA-, the company's AA/Stable rating is strong.

Underwriting risk | Property-Casualty (UR1)

Premium and Reserve risk due to unforeseeable adverse changes during the year from new and renewed business. When actual claims improve adversely from the expected claims ratios. This risk is subdivided into 3 categories: natural catastrophes, terror risk and man-made catastrophes. Recent data indicates that losses from natural catastrophes have increased from 93Bn USD to 250Bn USD in just 6 years (Figure 43). This suggests that if insurers do not carefully prepare their pricing and management of reserves, they may face a higher loss ratio or even solvency problems.

Figure 43. Total Losses in Catastrophes (in Bn USD)




***Source:*** *Swiss Re Institute.*

Underwriting Risk | Life-Health (UR2)

Underwriting risks in Life/Health sector are considered to be the biometric risks, which are mortality, disability, morbidity, and longevity. Mortality, disability, and morbidity may lead to unexpected amounts of claims. And Longevity risk is going to impact the amount of reserves the company is previewing could no longer be sufficient because of longer life expectancy.

Business Risk (BR)

Related to cost risk, risk that expenses associated with managing policies may be higher than expected, or that new business volume decreases to a level it cannot cover fixed costs. This type of risk is also related to policyholder behavior.

Operational Risk (OR)

Refers to internal failures, human errors, system failures, and external events, which includes Legal and Regulatory risks.

Strategic Risk (SR)

Risks that come from wrong decision-making on implementation of the business strategy and consequently decrease value.

Reputational Risk (RR)

Unexpected drop of the brand value (share price), value in-force business, or value of future business caused by a decline in reputation.

## Sensitivity analysis

Considering every risk that the company may have to face, investing in Allianz comprises a medium level of risk, with the recommendation system illustrated in (Figure 44).

Figure 44. Recommendation System (Medium Risk)

| Investment recommendation | Threshold |
|---|---|
| Sell | -5% ≤ |
| Reduce | >-5% & ≤5% |
| Neutral/Hold | >5% & ≤15% |
| Buy | >15% & ≤30% |
| Strong Buy | >30% |

***Source:*** *Author Analysis.*

Additionally, a sensitivity analysis was performed to assess the strength of the recommended PT. This looked at the potential risk of volatility in the underwriting performance, driven by higher/lower loss ratio in 2024F, which would influence future periods, and the beta for the cost of equity used in the computation of the discount rate. Furthermore, a sensitivity analysis was done on the persistence factor.

The base case considers the Loss Ratio to be 65.20%. It is estimated that an increase/ decrease of 100 bps will increase/decrease the PT in c.€7.07. Regarding Beta, the base case considers a 0.94 scenario, an increase of 55 bps presents less elasticity (decrease of c. €5.7 of PT) than a decrease of 55 bps (increase of c. €6.9 of PT). (Table 8)

*Table 8. PT Sensitivity to Loss Ratio and Beta*

| | Loss Ratio (Claims/Premiums) (%) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 237.44 € | 61.20% | 62.20% | 63.20% | 64.20% | 65.20% | 66.20% | 67.20% | 68.20% | 69.20% |
| Beta | 0.72 | 296.43 | 288.63 | 280.83 | 273.03 | 265.24 | 257.45 | 249.65 | 241.93 | 234.56 |
| | 0.78 | 288.47 | 280.84 | 273.20 | 265.57 | 257.95 | 250.32 | 242.69 | 235.15 | 227.98 |
| | 0.83 | 280.77 | 273.30 | 265.83 | 258.36 | 250.89 | 243.42 | 235.95 | 228.58 | 221.61 |
| | 0.89 | 273.33 | 266.01 | 258.69 | 251.37 | 244.06 | 236.75 | 229.43 | 222.23 | 215.45 |
| | 0.94 | 266.11 | 258.94 | 251.77 | 244.61 | **237.44** | 230.28 | 223.12 | 216.08 | 209.48 |
| | 1.00 | 259.13 | 252.10 | 245.08 | 238.06 | 231.04 | 224.02 | 217.00 | 210.12 | 203.69 |
| | 1.05 | 252.97 | 246.07 | 239.17 | 232.27 | 225.38 | 218.49 | 211.59 | 204.86 | 198.58 |
| | 1.10 | 246.97 | 240.20 | 233.42 | 226.65 | 219.88 | 213.11 | 206.34 | 199.74 | 193.61 |
| | 1.15 | 241.14 | 234.48 | 227.83 | 221.18 | 214.53 | 207.88 | 201.23 | 194.75 | 188.77 |

The persistence factor used in the base case was 0.8. The persistence factor elasticity to Allianz's PT is higher when there is an increase of 5% than a decrease of 5%, meaning that the valuation could vary between a Neutral recommendation and Strong Buy recommendation, assuming all other variables constant.

*Table 9. PT sensitivity to Persistence Factor*

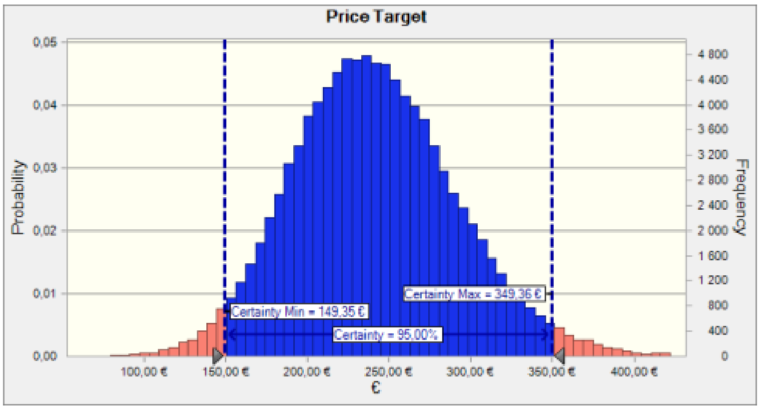
| | Persistence Factor | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 0.6 | 0.65 | 0.7 | 0.75 | 0.8 | 0.85 | 0.9 | 0.95 | 1 |
| Price Target | 226.93 | 228.69 | 230.89 | 233.70 | 237.44 | 242.66 | 250.44 | 263.29 | 288.51 |

## Monte Carlo Simulation

Besides the sensitivity analysis implemented above, a Monte Carlo simulation was done to complement (Table 10). This method relies on repeated random sampling on key variables to generate numerical results. The following variables were stressed: Loss Ratio, Risk Free Ratio, Beta, Equity Risk Premium and Persistence ratio.

Based on the simulation results, it reached an average PT of €241.83 per share (Figure 45), representing an upside potential of 15.81%. It also confirmed that the variables with greatest impact on Allianz PT were Loss ratio and Beta (Figure 46)

Figure 45. Monte Carlo Simulation



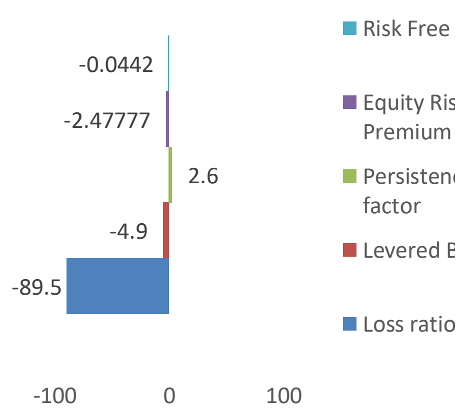

***Source:*** *Author Analysis.*

*Table 10. Monte Carlo statistics*

| Indicator | Amount |
|---|---|
| Trials | 100,000 |
| Base Case | €237.44 |
| Mean | €241.83 |
| Median | €238.83 |
| Standard Deviation | €64.39 |
| 10th percentile | €179.33 |
| 90th percentile | €307.13 |

***Source:*** *Author Analysis.*

Figure 46. Sensitivity: Price Target (Monte Carlo Simulation).




***Source:*** *Author Analysis.*

# Appendices

## Appendix 1: Statement of Financial Position

| Balance Sheet | 2021 | 2022 | 2023F | 2024F | 2025F | 2026F | 2027F |
|---|---|---|---|---|---|---|---|
| Investments | 965,678 | 824,029 | 930,062 | 952,392 | 952,859 | 967,777 | 990,001 |
| Other Assets | 48,263 | 49,645 | 51,325 | 53,814 | 54,903 | 56,080 | 57,179 |
| Cash and Equivalents | 24,214 | 22,573 | 22,573 | 22,573 | 22,573 | 22,573 | 22,573 |
| Deferred Tax Asset | 1,910 | 6,939 | 6,939 | 6,939 | 6,939 | 6,939 | 6,939 |
| Intangible Assets | 18,732 | 18,900 | 18,900 | 18,900 | 18,900 | 18,900 | 18,900 |
| Non-current assets and assets of disposal groups classified as held for sale | 145 | 3,324 | 3,324 | 3,324 | 3,324 | 3,324 | 3,324 |
| Reinsurance Recoverables | 56,731 | 59,509 | 59,509 | 59,509 | 59,509 | 59,509 | 59,509 |
| Deferred Policy Acquisition Costs | 23,756 | 36,583 | 36,583 | 36,583 | 36,583 | 36,583 | 36,583 |
| **Total Assets** | **1,139,429** | **1,021,502** | **1,129,215** | **1,154,034** | **1,155,590** | **1,171,685** | **1,195,008** |
| **Liabilities** | | | | | | | |
| Reserves | 904,882 | 832,489 | 886,598 | 919,875 | 929,857 | 933,814 | 959,162 |
| For Loss and Loss adjustment (Provision) | 86,974 | 91,267 | 93,204 | 97,482 | 99,893 | 101,391 | 103,327 |
| Unearned Premiums | 27,501 | 31,146 | 31,293 | 32,588 | 33,677 | 34,428 | 34,937 |
| Future Policy Benefits | 632,061 | 569,052 | 616,147 | 637,026 | 640,217 | 642,523 | 661,691 |
| Unit-Linked contracts | 158,346 | 141,024 | 145,954 | 152,780 | 156,070 | 155,473 | 159,207 |
| Liabilities to banks and costumers | 15,468 | 15,902 | 15,902 | 15,902 | 15,902 | 15,902 | 15,902 |
| Deferred Taxes | 5,626 | 1,131 | 1,131 | 1,131 | 1,131 | 1,131 | 1,131 |
| Other Liabilities | 86,596 | 74,577 | 76,663 | 79,205 | 80,808 | 82,541 | 84,158 |
| Liabilities From Discontinued Ops (Short-Term) | 0 | 3,098 | 3,098 | 3,098 | 3,098 | 3,098 | 3,098 |
| Financial liabilites carried at fair value through income | 20,891 | 18,077 | 64,584 | 47,966 | 32,199 | 36,569 | 26,550 |
| Certificated liabilities | 10,788 | 9,046 | 9,046 | 9,046 | 9,046 | 9,046 | 9,046 |
| Subordinated liabilites | 10,956 | 11,940 | 11,940 | 11,940 | 11,940 | 11,940 | 11,940 |
| **Total Liabilities** | **1,055,207** | **966,260** | **1,068,962** | **1,088,163** | **1,083,981** | **1,094,041** | **1,110,988** |
| Minority Interest | 4,270 | 3,768 | 3,768 | 3,768 | 3,768 | 3,768 | 3,768 |
| Share Capital & APIC | 28,902 | 28,902 | 28,902 | 28,902 | 28,902 | 28,902 | 28,902 |
| Retained Earnings & Other Equity | 51,050 | 22,572 | 27,583 | 33,201 | 38,938 | 44,974 | 51,350 |
| **Total Equity** | **84,222** | **55,242** | **60,253** | **65,871** | **71,608** | **77,644** | **84,020** |
| **Total Liabilities and Equity** | **1,139,429** | **1,021,502** | **1,129,215** | **1,154,034** | **1,155,590** | **1,171,685** | **1,195,008** |

## Appendix 2: Balance Sheet Common-size

| | 2021 | 2022 | 2023F | 2024F | 2025F | 2026F | 2027F |
|---|---|---|---|---|---|---|---|
| Investments | 84.8% | 80.7% | 82.4% | 82.5% | 82.5% | 82.6% | 82.8% |
| Other Assets | 4.2% | 4.9% | 4.5% | 4.7% | 4.8% | 4.8% | 4.8% |
| Cash and Equivalents | 2.1% | 2.2% | 2.0% | 2.0% | 2.0% | 1.9% | 1.9% |
| Deferred Tax Asset | 0.2% | 0.7% | 0.6% | 0.6% | 0.6% | 0.6% | 0.6% |
| Intangible Assets | 1.6% | 1.9% | 1.7% | 1.6% | 1.6% | 1.6% | 1.6% |
| Non-current assets and assets of disposal groups classified as held for sale | 0.0% | 0.3% | 0.3% | 0.3% | 0.3% | 0.3% | 0.3% |
| Reinsurance Recoverables | 5.0% | 5.8% | 5.3% | 5.2% | 5.1% | 5.1% | 5.0% |
| Deferred Policy Acquisition Costs | 2.1% | 3.6% | 3.2% | 3.2% | 3.2% | 3.1% | 3.1% |
| **Total Assets** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** |
| **Liabilities** | | | | | | | |
| Reserves | 79.4% | 81.5% | 78.5% | 79.7% | 80.5% | 79.7% | 80.3% |
| Liabilities to banks and costumers | 1.4% | 1.6% | 1.4% | 1.4% | 1.4% | 1.4% | 1.3% |
| Deferred Taxes | 0.5% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% |
| Other Liabilities | 7.6% | 7.3% | 6.8% | 6.9% | 7.0% | 7.0% | 7.0% |
| Liabilities From Discontinued Ops (Short-Term) | 0.0% | 0.3% | 0.3% | 0.3% | 0.3% | 0.3% | 0.3% |
| Financial liabilites carried at fair value through income | 1.8% | 1.8% | 5.7% | 4.2% | 2.8% | 3.1% | 2.2% |
| Certificated liabilities | 0.9% | 0.9% | 0.8% | 0.8% | 0.8% | 0.8% | 0.8% |
| Subordinated liabilites | 1.0% | 1.2% | 1.1% | 1.0% | 1.0% | 1.0% | 1.0% |
| **Total Liabilities** | **93%** | **95%** | **95%** | **94%** | **94%** | **93%** | **93%** |
| Minority Interest | 0.4% | 0.4% | 0.3% | 0.3% | 0.3% | 0.3% | 0.3% |
| Share Capital & APIC | 2.5% | 2.8% | 2.6% | 2.5% | 2.5% | 2.5% | 2.4% |
| Retained Earnings & Other Equity | 4.5% | 2.2% | 2.4% | 2.9% | 3.4% | 3.8% | 4.3% |
| **Total Equity** | 7.4% | 5.4% | 5.3% | 5.7% | 6.2% | 6.6% | 7.0% |
| **Total Liabilities and Equity** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** |

## Appendix 3: Income Statement

| In millions of Eur | 2021 | 2022 | 2023F | 2024F | 2025F | 2026F | 2027F |
|---|---|---|---|---|---|---|---|
| **Premiums earned (net)** | **77,656** | **83,912** | **86,751** | **89,628** | **91,442** | **93,403** | **95,233** |
| Property and Casualty | 53,054 | 58,878 | 61,529 | 63,687 | 65,152 | 66,651 | 68,047 |
| Life-Health | 24,602 | 25,033 | 25,222 | 25,941 | 26,290 | 26,752 | 27,187 |
| **Operating investment result** | **24,338** | **14,506** | **23,358** | **24,240** | **24,574** | **25,286** | **26,201** |
| Property and Casualty | 2,792 | 3,020 | 3,037 | 3,152 | 3,195 | 3,288 | 3,407 |
| Life-Health | 21,546 | 11,486 | 20,320 | 21,088 | 21,379 | 21,998 | 22,794 |
| **Fee and commission income** | **937** | **971** | **948** | **963** | **977** | **1,012** | **1,026** |
| **Other income** | **15** | **97** | **97** | **100** | **102** | **105** | **107** |
| **Claims and insurance benefits incurred (net)** | **-57,122** | **-62,824** | **-62,269** | **-63,548** | **-64,800** | **-66,169** | **-67,448** |
| Property and Casualty | -35,565 | -39,731 | -40,855 | -41,524 | -42,479 | -43,456 | -44,367 |
| Life-Health | -21,557 | -23,093 | -21,414 | -22,024 | -22,320 | -22,713 | -23,082 |
| **Operational Expenses** | **-21,229** | **-22,044** | **-23,198** | **-23,968** | **-24,453** | **-24,978** | **-25,468** |
| **Other expenses** | **-13,877** | **-3,147** | **-13,400** | **-13,785** | **-13,975** | **-14,224** | **-14,457** |
| **EBIT Property-Casualty** | **5,710** | **6,189** | **6,871** | **7,869** | **8,016** | **8,223** | **8,445** |
| **EBIT Life/Health** | **5,010** | **5,282** | **5,416** | **5,761** | **5,851** | **6,211** | **6,749** |
| **EBIT (Asset Management)** | **3,489** | **3,199** | **3,407** | **3,628** | **3,864** | **4,115** | **4,382** |
| **EBIT (Corporate and Other)** | **-772** | **-512** | **-692** | **-620** | **-555** | **-497** | **-446** |
| **EBIT (Consolidation)** | **-38** | **5** | **0** | **0** | **0** | **0** | **0** |
| **Operating profit (loss)** | **13,399** | **14,164** | **15,002** | **16,638** | **17,176** | **18,052** | **19,130** |
| Non-Operating profit (loss) | -3,898 | -4,517 | -897 | -897 | -897 | -897 | -897 |
| **EBT** | 9,519 | 9,649 | 14,104 | 15,741 | 16,279 | 17,155 | 18,233 |
| Income taxes | -2,415 | -2,467 | -3,593 | -4,315 | -4,435 | -4,644 | -4,905 |
| **Net income (loss)** | 7,105 | 7,182 | 10,511 | 11,731 | 12,132 | 12,785 | 13,588 |
| Non-controlling interest | 495 | 444 | 489 | 496 | 656 | 713 | 836 |
| **Net income available to shareholders** | 6,610 | 6,738 | 10,022 | 11,235 | 11,475 | 12,072 | 12,753 |

## Appendix 4: Income Statement Common Size

| In % of Premium Earned | 2021 | 2022 | 2023F | 2024F | 2025F | 2026F | 2027F |
|---|---|---|---|---|---|---|---|
| Premiums earned (net) | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Operating investment result | 31% | 17% | 27% | 27% | 27% | 27% | 28% |
| Fee and commission income | 1% | 1% | 1% | 1% | 1% | 1% | 1% |
| Other income | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Claims and insurance benefits incurred (net) | -74% | -75% | -72% | -71% | -71% | -71% | -71% |
| Operational Expenses | -27% | -26% | -27% | -27% | -27% | -27% | -27% |
| Other expenses | -18% | -4% | -15% | -15% | -15% | -15% | -15% |
| **EBIT Insurance operations** | 7% | 7% | 8% | 9% | 9% | 9% | 9% |
| **EBIT (Asset Management)** | 4% | 4% | 4% | 4% | 4% | 4% | 5% |
| **EBIT (Corporate and Other)** | -1% | -1% | -1% | -1% | -1% | -1% | 0% |
| **EBIT (Consolidation)** | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| **Operating profit (loss)** | 17% | 17% | 17% | 19% | 19% | 19% | 20% |
| Non-operating investment result | 2% | -4% | -1% | -1% | -1% | -1% | -1% |
| Non-operating expenses | -1% | -1% | 2% | 2% | 3% | 3% | 3% |
| Non-Operating profit (loss) | -5% | -5% | -1% | -1% | -1% | -1% | -1% |
| **EBT** | 12% | 11% | 16% | 18% | 18% | 18% | 19% |
| Income taxes | -3% | -3% | -4% | -5% | -5% | -5% | -5% |
| **Net income (loss)** | 9% | 9% | 12% | 13% | 13% | 14% | 14% |
| Non-controlling interest | 1% | 1% | 1% | 1% | 1% | 1% | 1% |
| **Net income available to shareholders** | 9% | 8% | 12% | 13% | 13% | 13% | 13% |

## Appendix 5: Key Financial Ratios

| Financial Analysis | units | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023F | 2024F | 2025F | 2026F | 2027F |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Underwriting Ratios | | | | | | | | | | | | |
| Expense Ratio | % | 28.7% | 28.0% | 27.5% | 26.8% | 26.7% | 26.8% | 26.8% | 26.8% | 26.8% | 26.8% | 26.8% |
| Combined Ratio | % | 95.2% | 94.0% | 95.5% | 96.3% | 93.8% | 94.2% | 93.2% | 92.0% | 92.0% | 92.0% | 92.0% |
| Net earnings Ratio | % | 10.1% | 10.8% | 10.9% | 9.4% | 9.1% | 8.6% | 12.1% | 13.1% | 13.3% | 13.7% | 14.3% |
| Net Premium Earned Growth | % | | 0.1% | 6.2% | -0.3% | 2.6% | 8.1% | 3.4% | 3.3% | 2.0% | 2.1% | 2.0% |
| Operating Profit Growth | % | | 3.7% | 3.0% | -9.3% | 24.7% | 5.7% | 5.9% | 10.9% | 3.2% | 5.1% | 6.0% |
| Underwriting margins | Bn € | | 0.14 € | -0.51 € | -2.27 € | -0.70 € | -0.96 € | 1.28 € | 2.11 € | 2.19 € | 2.26 € | 2.32 € |
| Profitability Ratios | | | | | | | | | | | | |
| Return on Common Equity | % | 11.0% | 11.8% | 11.7% | 8.8% | 8.2% | 10.3% | 18.6% | 18.9% | 17.7% | 17.0% | 16.5% |
| Return on Assets | % | 0.80% | 0.86% | 0.82% | 0.67% | 0.62% | 0.70% | 0.93% | 1.02% | 1.05% | 1.09% | 1.14% |
| Investment Yield | % | 2.97% | 2.36% | 2.60% | 2.48% | 2.52% | 1.76% | 2.51% | 2.55% | 2.58% | 2.61% | 2.65% |
| Payout Ratio | % | 51.61% | 51.08% | 50.53% | 58.11% | 66.70% | 68.24% | 50.00% | 50.00% | 50.00% | 50.00% | 50.00% |
| EPS | € | 15.50 € | 17.31 € | 18.84 € | 16.43 € | 16.12 € | 16.60 € | 25.03 € | 28.87 € | 30.80 € | 33.13 € | 35.00 € |
| DPS | € | 8.00 € | 9.00 € | 9.60 € | 9.60 € | 10.80 € | 11.40 € | 12.61 € | 14.75 € | 15.75 € | 16.57 € | 17.50 € |
| Solvency ratios | | | | | | | | | | | | |
| Net Liabilities to Policyholders' Surplus | % | 138% | 151% | 133% | 126% | 136% | 222% | 207% | 197% | 187% | 175% | 165% |
| Solvency II | % | 229% | 229% | 212% | 207% | 209% | 201% | | | | | |

## Appendix 6: Forecasting Assumptions

| Income Statement Assumptions | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Units | 2022 | 2023F | 2024F | 2025F | 2026F | 2027F | Notes |
| Property-casualty Segment | | | | | | | | |
| Net Premium Earned growth | YoY | 11.0% | 4.50% | 3.51% | 2.30% | 2.30% | 2.09% | Up until 2019 Allianz managed to grow close to global values and in 2022E even with the impact of War in Europe, they managed to outperform the market, so for 2023F it is forecasted to be the CAGR of 2017-2022E, and the periods forward, the market expectation minus a spread defined in 2023F |
| Loss ratio | % | 67.5% | 66.4% | 65.2% | 65.2% | 65.2% | 65.2% | Allianz has a combined ratio target of 92%, that means lowering the loss ratio close to the industry and maintaining for forward periods |
| Expense ratio | % | 26.8% | 26.8% | 26.8% | 26.8% | 26.8% | 26.8% | Remains the same as in 2022 |
| Investment returns | % | 0.37% | 0.33% | 0.33% | 0.34% | 0.34% | 0.34% | Appendix 7 |
| Fee and commission return | % Premium | 0.04% | 0.10% | 0.08% | 0.07% | 0.07% | 0.07% | 5Y Moving Average |
| Other income | % Premium | 0.15% | 0.14% | 0.14% | 0.14% | 0.14% | 0.14% | 3Y Historic Average excluding pandemic and the period of Russia-Ukraine conflict |
| Other expenses | % Premium | 0.57% | 0.81% | 0.81% | 0.81% | 0.81% | 0.81% | 3Y Historic Average excluding pandemic and the period of Russia-Ukraine conflict |
| Non-operating investment return | % | | 0% | 0% | 0% | 0% | 0% | Not predictable |
| Non-operating expenses | | -771 | -221 | -221 | -221 | -221 | -221 | Amortization of intangible assets, values of 2022 |
| Income tax | % EBIT | 25.6% | 25.5% | 25.5% | 25.5% | 25.5% | 25.5% | Effective tax rate 4Y average |
| Life-Health | | | | | | | | |
| Net Premium Earned growth | YoY | 1.8% | 0.76% | 2.85% | 1.34% | 1.76% | 1.62% | 2023F Can be explained by the higher demand for health products after pandemic period but negatively impacted by life sector, which is expected to have a lower growth due to impacts of inflation on family's real income. The growth rate for future periods is going to be the average historic spread of Allianz to the market applied to future expectations. |
| Loss ratio | % | 91.4% | 84.9% | 84.9% | 84.9% | 84.9% | 84.9% | Expectation of decrease from application of cost efficiency by Allianz, returning to numbers previous pandemic years. |
| Expense ratio | % | 30.6% | 26.6% | 26.6% | 26.6% | 26.6% | 26.6% | 3y Historic average |
| Investment returns | % | 1.39% | 2.18% | 2.21% | 2.24% | 2.27% | 2.30% | Appendix 7 |
| Fee and commission return | % Premium | 3.8% | 3.5% | 3.5% | 3.5% | 3.6% | 3.6% | 5Y Moving Average |
| Other income | % Premium | 0.03% | 0.03% | 0.03% | 0.03% | 0.03% | 0.03% | 4Y Historic Average |
| Other expenses | % Premium | 11.2% | 51.14% | 51.14% | 51.14% | 51.14% | 51.14% | 3Y Historic Average excluding pandemic and the period of Russia-Ukraine conflict |
| Non-operating investment return | % | 0% | 0% | 0% | 0% | 0% | 0% | Not predictable |
| Non-operating expenses | | -350 | -83 | -83 | -83 | -83 | -83 | Amortization of intangible assets, values of 2022 |
| Income tax | % EBIT | 25.6% | 25.5% | 25.5% | 25.5% | 25.5% | 25.5% | Effective tax rate 4Y average |
| Asset Management | | | | | | | | |
| EBIT | YoY | -8.31% | 6.5% | 6.5% | 6.5% | 6.5% | 6.5% | 3Y Historic Average before Pandemic years and War |
| Non-operating profit | € | | -17.2 | -17.0 | -17.0 | -17.0 | -17.0 | Amortization of intangible assets |
| Income tax | % EBIT | 25.6% | 25.5% | 25.5% | 25.5% | 25.5% | 25.5% | Effective tax rate 4Y average |
| Corporate and other | | | | | | | | |
| EBIT | YoY | -33.70% | -10.41% | -10.41% | -10.41% | -10.41% | -10.41% | 3Y Historical Average before Pandemic years and War |
| Non-operating profit | € | -723 | -576 | -576 | -576 | -576 | -576 | External Expenses and Intangible assets amortization |
| Income tax | % EBIT | 25.6% | 25.5% | 25.5% | 25.5% | 25.5% | 25.5% | Effective tax rate 4Y average |
| Group | | | | | | | | |
| Non-controlling interests | YoY | -10.3% | 10.1% | 1.5% | 32.2% | 8.6% | 17.2% | 3Y Moving Average |

| Balance Sheet Assumptions |
|---|

| | Units | 2022 | 2023F | 2024F | 2025F | 2026F | 2027F | Notes |
|---|---|---|---|---|---|---|---|---|
| Assets | | | | | | | | |
| Investments | %Reserves | 98.98% | 104.90% | 103.53% | 102.47% | 103.64% | 103.22% | 2Y Moving Average |
| Other Assets | %Premium | 59.2% | 60.0% | 60.0% | 60.0% | 60.0% | 60.0% | 4Y Historic Average |
| Cash & Equivalents | YoY | -6.78% | 0% | 0% | 0% | 0% | 0% | Same as 2022. The rationale behind is the historical increasing cash even though there has been an active buyback program since 2017 and investment in cross-border insurance companies, moreover earnings have been stable and expected to remain strong, being sufficient for any volatility and variation of the assets and liabilities |
| Deferred taxes | YoY | 263.30% | 0% | 0% | 0% | 0% | 0% | Same as 2022 |
| Intangible Assets | YoY | 0.90% | 0% | 0% | 0% | 0% | 0% | Same as 2022 |
| Non-current assets and assets of disposal groups classified as held for sale | YoY | 2192.41% | 0% | 0% | 0% | 0% | 0% | Same as 2022 |
| Reinsurance Recoverables | YoY | 4.90% | 0% | 0% | 0% | 0% | 0% | Same as 2022 |
| Deferred Policy Acquisition Costs | YoY | 53.99% | 0% | 0% | 0% | 0% | 0% | Same as 2022 |
| Liabilities | | | | | | | | |
| Reserves | | | | | | | | |
| For Loss and Loss adjustment | %Total Premium | 108.8% | 107.4% | 108.8% | 109.2% | 108.6% | 108.5% | 4Y Moving Average |
| Unearned Premium | %P&C Premium | 52.90% | 50.86% | 51.17% | 51.69% | 51.65% | 51.34% | 4Y Moving Average |
| Future Policy Benefits | % LH Premium | 2273.2% | 2442.9% | 2455.7% | 2435.2% | 2401.7% | 2433.9% | 4Y Moving Average |
| Unit Linked Contracts | % LH Premium | 563.4% | 578.7% | 588.9% | 593.7% | 581.2% | 585.6% | 4Y Moving Average |
| Liabilities to banks and costumers | YoY | 2.81% | 0% | 0% | 0% | 0% | 0% | Same as 2022 |
| Deferred Taxes | YoY | -79.90% | 0% | 0% | 0% | 0% | 0% | Same as 2022 |
| Other Noncurrent Liabilities | %Premium | 88.9% | 88% | 88% | 88% | 88% | 88% | 3Y Historic Average |
| Liabilities From Discontinued Ops (Short-Term) | YoY | #DIV/0! | 0% | 0% | 0% | 0% | 0% | Same as 2022 |
| Financial liabilites carried at fair value through income | YoY | -13.47% | 0% | 0% | 0% | 0% | 0% | Same as 2022 |
| Certificated liabilities | YoY | -16.15% | 0% | 0% | 0% | 0% | 0% | Same as 2022 |
| Subordinated liabilites | YoY | 8.98% | 0% | 0% | 0% | 0% | 0% | Same as 2022 |
| Shareholders Equity | | | | | | | | |
| Minority interest | YoY | -11.8% | 0% | 0% | 0% | 0% | 0% | Same as 2022 |

## Appendix 7: Forecast of Investments returns

| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023F | 2024F | 2025F | 2026F | 2027F | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Property- Casualty | | | | | | | | | | | | |
| Return | 0.40% | 0.37% | 0.34% | 0.28% | 0.29% | 0.37% | 0.33% | 0.33% | 0.34% | 0.34% | 0.34% | Forecasted Investment returns with benchmark from AAA bonds |
| AAA Bonds | 0.40% | 0.37% | -0.27% | -0.52% | -0.32% | 2.48% | 2.51% | 2.55% | 2.58% | 2.61% | 2.65% | ECB yield curve for AAA Bonds in 2023 from 07 of June, with forward rate until 2028 |
| Life-Health | | | | | | | | | | | | |
| Return | 2.57% | 1.99% | 2.27% | 2.20% | 2.23% | 1.39% | 2.18% | 2.21% | 2.24% | 2.27% | 2.30% | Forecasted Investment returns with benchmark from AAA bonds |
| AAA Bonds | 0.40% | 0.37% | -0.27% | -0.52% | -0.32% | 2.48% | 2.51% | 2.55% | 2.58% | 2.61% | 2.65% | ECB yield curve for AAA Bonds in 2023 from 07 of June, with forward rate until 2028 |

Given Allianz's history of delivering returns above the ECB yield curve for AAA bonds, a conservative approach is assumed for future investment income, with the yield curve being used as a proxy for forecasting purposes. Additionally, the weights used for a better distribution of the yield in the two segments was the proportion of returns in 2019 of each segment over the total return.

## Appendix 8: Global Premium Forecast 2025F-2027F

| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023F | 2024F | 2025F | 2026F | 2027F | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| real global GDP | 3.8% | 3.6% | 2.8% | -3.0% | 6.0% | 3.2% | 2.6% | 2.9% | 3.2% | 3.2% | 3.1% | IMF (2023) and OECD (2023) Forecast |
| Inflation | 3.3% | 3.6% | 3.5% | 3.2% | 4.7% | 8.1% | 6.1% | 4.1% | 3.6% | 3.6% | 3.5% | IMF (2023) and OECD (2023) Forecast |
| Property- Casualty | | | | | | | | | | | | |
| Spread GDP- PC | 1.00% | -0.30% | -1.40% | -6.10% | 3.40% | 2.64% | 0.80% | 0.10% | 1.07% | 1.07% | 1.07% | 2025F-2027F, average spread without 2020 |
| Property-Casualty | 2.80% | 3.90% | 4.20% | 3.10% | 2.60% | 0.56% | 1.80% | 2.80% | 2.13% | 2.13% | 2.03% | Real global growth, data from 2025F-2027F is going to be a difference from forecast of the average spread between GDP and Property-Casualty; 2023F-2024F Swiss Re estimations |
| P&C nominal g | 6.19% | 7.64% | 7.85% | 6.40% | 7.42% | 8.70% | 8.01% | 7.01% | 5.81% | 5.81% | 5.60% | |
| Life-Health | | | | | | | | | | | | |
| Spread GDP-LIFE | 3.30% | 1.60% | 1.10% | 1.20% | 1.50% | 8.47% | 0.90% | 1.20% | 2.86% | 2.46% | 2.40% | 2025F-2027F, moving average |
| Life stats real g | 0.50% | 2.00% | 1.70% | -4.20% | 4.50% | -5.27% | 1.70% | 1.70% | 0.74% | 1.14% | 1.10% | Real global growth, data from 2025F-2027F is going to be a difference from forecast of the average spread between GDP and Life; 2023F-2024F Swiss Re estimations |
| Life stats nominal | 3.82% | 5.67% | 5.26% | -1.13% | 9.41% | 2.40% | 7.90% | 5.87% | 4.36% | 4.78% | 4.64% | |

## Appendix 9: Country Risk Premiums

| Country | 03/01/2023 |
|---|---|
| Australia | 0.00% |
| Austria | 0.69% |
| Belgium | 1.03% |
| Brazil | 5.19% |
| Bulgaria | 2.76% |
| Cameroon | 9.49% |
| Canada | 0.00% |
| China | 1.22% |
| Colombia | 3.29% |
| Croatia | 3.29% |
| Czech Republic | 1.03% |
| Egypt | 9.49% |
| France | 0.85% |
| Greece | 6.21% |
| Hong Kong | 1.03% |
| Hungary | 3.29% |
| India | 3.79% |
| Indonesia | 3.29% |
| Italy | 3.79% |
| Japan | 1.22% |
| Lithuania | 1.46% |
| Malaysia | 2.07% |
| Mexico | 3.29% |
| Netherlands | 0.00% |
| Poland | 1.46% |
| Portugal | 3.29% |
| Romania | 3.79% |
| Saudi Arabia | 1.22% |
| Slovakia | 1.46% |
| Spain | 2.76% |
| Switzerland | 0.00% |
| Thailand | 2.76% |
| Turkey | 11.22% |
| United Kingdom | 1.03% |
| United States | 0.00% |
| Ireland | 1.22% |
| Taiwan | 1.03% |

Country risk premiums retrieved from Damodaran (2023) database as of 3 of January 2023.

## Appendix 10: Residual Income Model

| Year | 2022 | 2023F | 2024F | 2025F | 2026F | 2027F | Terminal Period |
|---|---|---|---|---|---|---|---|
| Net Income | 6,737.75 € | 10,022.22 € | 11,234.85 € | 11,475.31 € | 12,071.73 € | 12,752.64 € | |
| Equity Charge | 5,728.82 € | 6,248.50 € | 6,831.05 € | 7,413.60 € | 8,008.62 € | 8,634.56 € | |
| Excess Equity Return | 1,008.93 € | 3,773.73 € | 4,403.81 € | 4,061.71 € | 4,063.12 € | 4,118.08 € | 13,559.51 € |
| Cumulated Cost of Equity | | | 1.00 | 1.10 | 1.22 | 1.34 | 1.34 |
| Present Value of Equity Excess Return | | | 4,403.81 € | 3,680.07 € | 3,335.45 € | 3,062.93 € | 10,085.23 € |
| Accumulated Present Value of Equity Excess Return | | | 4,403.81 € | 8,083.88 € | 11,419.32 € | 14,482.25 € | 24,567.48 € |
| | | | | | | | |
| Beginning BV of Equity | 55,242.00 € | 60,253.11 € | 65,870.54 € | 71,487.97 € | 77,225.62 € | 83,261.48 € | |
| Cost of Equity | 10.37% | 10.37% | 10.37% | 10.37% | 10.37% | 10.37% | |
| Equity Cost | 5,728.82 € | 6,248.50 € | 6,831.05 € | 7,413.60 € | 8,008.62 € | 8,634.56 € | |

| Price Target | |
|---|---|
| Equity Invested (in Bn) | 65.87 € |
| PV of Equity Excess Return + Terminal Value (in Bn) | 24.57 € |
| Equity Value (in Bn) | 90.44 € |
| # Shares in Mn | 380.9 |
| Price Target | 237.44 € |
| Current Price | 208.85 € |
| Potential | 13.69% |

## Appendix 11: Dividend Discount Model

| Year | 2022 | 2023F | 2024F | 2025F | 2026F | 2027F | Terminal Value |
|---|---|---|---|---|---|---|---|
| Net income | 6,738 | 10,022 | 11,235 | 11,475 | 12,072 | 12,753 | |
| Dividend Payout | 0.682391 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | |
| Dividends | 4597.78 | 5011.112 | 5617.427 | 5737.653 | 6035.865 | 6376.319 | 124667.0576 |
| Shares | 403 | 397 | 381 | 364 | 364 | 364 | |
| DPS | 11.4 | 12.60871 | 14.74855 | 15.74862 | 16.56715 | 17.50162 | |
| g | 5.56% | 10.60% | 16.97% | 6.78% | 5.20% | 5.64% | 5% |
| Ke | 10.37% | 10.37% | 10.37% | 10.37% | 10.37% | 10.37% | 10.37% |
| PV Dividend | | | | 14.26888 | 13.60011 | 13.01728 | 92724.33201 |

| | |
|---|---|
| Target price (2024F) | 243.56 € |
| Current Price | 208.85 € |
| Potential | 16.62% |
| | |
| Future g | 5% |

## Appendix 12: Peers Group

| | AXA | Allianz | Zurich | Generali | Munich | Talanx | Chubb | AEGON |
|---|---|---|---|---|---|---|---|---|
| *Headquarters* | *France* | *Germany* | *Switzerland* | *Italy* | *Germany* | *Germany* | *USA* | *Netherlands* |
| **Market Cap (B €)** | 64.42 | 85.99 | 65.84 | 29.27 | 45.28 | 11.63 | 80.76 | 9.93 |
| **Revenues 2022 (B €)** | 102.35 | 152.70 | 41.75 | 79.30 | 68.45 | 48.99 | 43.17 | 46.14 |
| **Assets 2022 (B €)** | 696.70 | 1021.50 | 377.78 | 519.05 | 298.57 | 193.13 | 199.14 | 468.25 |
| **Employees** | 145000 | 159000 | 53000 | 82000 | 41000 | 24000 | 34000 | 22000 |
| **Clients (M)** | 93 | 122 | 55 | 68 | 200 | 20 | 300 | 32 |
| **Solvency Ratio** | 215% | 201% | 265% | 221% | 260% | 208% | 206% | 211% |
| | | | | | | | | |
| **Services** | | | | | | | | |
| Property & Casualty Insurance | √ | √ | √ | √ | √ | √ | √ | √ |
| Health Insurance | √ | √ | √ | √ | √ | √ | √ | √ |
| Life Insurance | √ | √ | √ | √ | √ | √ | √ | √ |
| Savings | √ | √ | √ | √ | √ | √ | √ | √ |
| Banking | √ | X | X | X | X | X | X | X |
| Asset Management | √ | √ | √ | √ | √ | √ | X | √ |
| Business Insurance | √ | √ | √ | √ | √ | √ | √ | √ |
| **Profitability Indicators** | | | | | | | | |
| P&C Combined Ratio | 94.60% | 94.20% | 94.30% | 93.20% | 96.20% | 98.90% | 88.00% | 138% |
| **Regions** | | | | | | | | |
| EMEA | √ | √ | √ | √ | √ | √ | √ | √ |
| Latin America | √ | √ | √ | √ | √ | √ | √ | √ |
| North America | √ | √ | √ | √ | √ | √ | √ | √ |
| APAC | √ | √ | √ | √ | √ | √ | √ | √ |
| ***Notes*** | | | | | | *Lower number of employees, assets, and clients* | *Does not contain Asset Manageme nt* | *High combined ratio* |

Talanx was not selected for lower than average number of employees, clients and assets. Chubb was not selected due to not containing Asset Management on their business lines and AEGON for having higher than average Combined Ratio.

### Appendix 13: Relative Valuation

| P/E = α + gEPS 5y + Payout – Beta | |
|---|---|
| *Regression Statistics* | |
| Multiple R | 0.726023878 |
| R Square | 0.527110672 |
| Adjusted R Squ | -0.891557313 |
| Standard Error | 3.693016942 |
| Observations | 5 |

| P/B = α + ROE – Beta | |
|---|---|
| *Regression Statistics* | |
| Multiple R | 0.836854118 |
| R Square | 0.700324814 |
| Adjusted R Squ | 0.400649629 |
| Standard Error | 0.406645752 |
| Observations | 5 |

Both regressions present a robust R square, therefore the results of the linear regression are going to be well fit.

| Company | Beta 5 year | ROE | g | Payout | P/B | P/E | Predicted P/B | Predicted P/E |
|---|---|---|---|---|---|---|---|---|
| Allianz | 1.08733699 | 10.10% | -2.52% | 69.17% | 1.57 | 12.36 | 1.37 | 11.91 |
| Munchen | 0.90565938 | 13.20% | 10.41% | 46.33% | 1.99 | 12.34 | 2.10 | 10.86 |
| AXA | 1.45976339 | 11.10% | 26.96% | 61.57% | 1.3 | 9.22 | 1.34 | 9.11 |
| Zurich | 0.92998032 | 14.30% | 7.35% | 78.45% | 2.65 | 15.55 | 2.30 | 14.43 |
| Generali | 0.95972912 | 12.80% | 8.07% | 61.47% | 1.59 | 9.05 | 1.99 | 12.21 |
| | | | | | | | | |
| | | | | | | Median | 2.04 | 11.53 |
| | | | | | | Average | 1.93 | 11.65 |

For the variables, Beta is the 5 year monthly beta with Stoxx 500 as benchmark for every company, historic ROE, g of 5 year EPS, historic payout, historic P/B and historic P/E.

### Appendix 14: Share Buyback

| Millions | | | | |
|---|---|---|---|---|
| Year | 2022 | 2023 | 2024 | 2025 |
| Nº shares outstanding | 404,784,348 | 403,313,996 | 397,432,488 | 380,879,922 |
| Price | 204.03 € | 204.03 € | 204.03 € | 204.03 € |
| Nº Shares buy-back | 1,470,352 | 5,881,508 | 16,552,566 | 16,552,566 |
| Purchased Volume in EUR | 299,995,918.56 € | 1,200,004,081.44 € | 3,377,220,113.31 € | 3,377,220,113.31 € |
| Final Nº Shares | 403,313,996 | 397,432,488 | 380,879,922 | 364,327,355 |
| Share Capital % | 0.36% | 1.46% | 4.09% | 4.09% |
| | | | | |
| Buyback Up to 10% | | | 2024-2025 | 8.18% |

Allianz is planning a buyback program for 2022-2025 Period where it wants to repurchase up to 10% of their capital stock at the time of resolution of authorization, which was after the General Meeting in May 2022. The final amount of shares outstanding will be 380.9 million, with the average price for the program, in 2023-2025, assumed to be valued as the average of 2022 buy-back price.

## Appendix 15: Peers ratios

| | AXA | Allianz | Zurich | Generali | Munich |
|---|---|---|---|---|---|
| Underwriting Ratios | | | | | |
| Expense Ratio | 26% | 26.8% | 30.6% | 28.7% | 29.7% |
| Combined Ratio | 94.60% | 94.2% | 94.3% | 93.2% | 96.2% |
| Net earnings Ratio | 6.6% | 8.6% | 11.1% | 4.2% | 5.4% |
| Profitability Ratios | | | | | |
| Return on Common Equity | 10.80% | 10.25% | 14.67% | 12.80% | 13.18% |
| Return on Assets | 0.96% | 0.66% | 1.22% | 0.56% | 1.15% |
| Investment Yield | 0.28% | 1.76% | -3.14% | -1.08% | 1.73% |
| Payout Ratio | 0.584192 | 0.68654 | 0.709449 | 0.627027 | 0.47097 |
| EPS | 2.91 | 16.605 | 31.01 | 1.85 | 24.63 |
| DPS | 1.7 | 11.4 | 22 | 1.16 | 11.6 |
| Solvency ratios | | | | | |
| Net Liabilities to Policyholders | 7.877734 | 2.215941 | 3.069571 | 2.330723 | 2.137245 |

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Recommendation System

| Level of Risk | SELL | REDUCE | HOLD/NEUTRAL | BUY | STRONG BUY |
|---|---|---|---|---|---|
| High Risk | 0%≤ | >0% & ≤10% | >10% & ≤20% | >20% & ≤45% | >45% |
| Medium Risk | -5%≤ | >-5% & ≤5% | >5% & ≤15% | >15% & ≤30% | >30% |
| Low Risk | -10%≤ | >-10% & ≤0% | >0% & ≤10% | >10% & ≤20% | >20% |