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Risks and Returns Analysis of Investment Strategies in Pakistan's Insurance Sector

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Abstract

The development of insurance industry of Pakistan has witnessed enormous growth in recent years due to increasing awareness in the sphere of risk management and liberalization of financial markets. Investment strategies followed by insurance companies are very important to gain the best returns with corresponding risks. This study analyzes risk-return feature of various sorts of investment strategies adopted by the insurance firms of the Pakistani economy on equity, fixed income securities, real estate and alternative investments. Through the analysis of insurance firms and their secondary financial data and performance reports, this study highlights the correlation between the risk exposure and the returns and what strategy provides the greatest financial returns while staying within the parameters of the law. The findings imply that investment portfolio diversification with prudent risk management practices contribute to the financial stability of the insurance companies, and growth in the insurance sector. This study provides some insights to the insurers, investors as well as policy makers who are attempting to make optimized investment decisions in the evolving insurance market in Pakistan.

Introduction

The insurance sector has a pivotal role in financial intermediation, economic stability and risk mitigation particularly in emerging economies like Pakistan. By gathering the premiums paid by the policyholders and also investing the same in various types of financial instruments, the insurance companies also make contribution in the formation of capital, liquidity of the market, and growth of the economy (Ahmed & Rehman, 2020). Recently, Pakistan has witnessed structural overhaul of its insurance sector and regulation of insurance which has enabled the industry to adopt sophisticated investment strategies and also manage the risks better (Khan & Ali, 2021). Understanding the tradeoff between risk and return in the sector is important for insurers in order to be sustainable and profitable, without endangering funds of policyholders.

Investment strategies in insurance sector are generally diversified in various asset classes; equities, fixed income securities, real estate and alternative investments in private equity or construction/infrastructure type of projects. Each of these asset classes possess unique risk and return profile and are affected by market volatility, interest rate's fluctuation and economic condition (Rizvi et al, 2022). Equity investments, for example, have more opportunities for returns, exposure to market risks and short-term market volatility. In comparison to this is fixed incomes which have fixed cash flows and pose less risk but may not have that much growth potential. Real estate investments comprise a part of portfolio to provide diversification of investments and potential capital gains and come with corresponding liquidity and management expenses. The effective management of these various investment vehicles is important for insurance companies who want to optimise their risk-return profile.

Theorieatical frameworks such as Modern Portfolio Theory (MPT) and Capital Asset Pricing Model (CAPM) provide insights of guidance in investment decision in insurance industry. MPT gives importance to diversification to improve the overall risk position without losing expected returns and suggests that insurers can obtain the best risk-return position through careful diversification among the various classes of portfolio (Markowitz, 1952). Similarly, CAPM helps in determining the expected

returns as a result of the systematic risk so as to make appropriate investment decisions in the equity and bond market (Sharpe, 1964). A number of empirical studies in emerging markets indicate that insurance companies such frameworks are likely to rank better in financial stability and performance, although sector-specific factors such as regulatory considerations, liquidity of the markets, and macroeconomic volatility play a role (Hussain & Malik, 2021).

In Pakistan, the insurance sector is unique in the manner of challenges and opportunities which affect the investment strategies. The penetration of insurance is still quite low as compared to the developed economies, However, the sector is continuously growing owing to the urbanization of society, growth of middle-class income and increasing awareness about risk management (Ahmed & Rehman, 2020). On the other hand, regulatory supervision by the Securities and Exchange Commission of Pakistan (SECP) ensures prudent investment practices and sufficient solvency margins by insurers, and the make-up of the investment portfolio. Some of the latest financial reports prove that steadily increasing share of the insurances funds is being invested in equities and government securities which basically means a cautious but calculated balance of return and risk is being followed in the Pakistani context (Rizvi et al., 2022).

Equally risk management practice in the insurance sector is of paramount importance in order to protect investment returns and ensure solvency. Insurers apply different approaches such as asset/liability balancing, credit risk analysis, and market risk monitoring to ensure the investment portfolios comply with regulatory regulations and organizational purposes (Hussain & Malik, 2021). These practices minimize the potential adverse impacts of market fluctuations, rate of interest and shocks to the economy thereby securing the funds of policy holders and increasing investor confidence. In particular, financial simplification such as portfolio diversification across different asset classes and investment horizons has become a major strategy in terms of reducing unsystematic risk and stabilising returns.

A number of empirical studies have focus towards the relationship between investment strategies and financial performance in insurance industry in Pakistan. For instance, equity-heavy portfolios are likely to offer better returns in periods of a bullish market but put insurers at a great risk of a loss in periods of market downturns (Ahmed & Rehman, 2020). Conversely, portfolios with greater percentage of fixed-income securities and government bonds, have a stable but moderate return with security sacrificed for growth opportunities. Real estate investments come with other advantages in the sense of providing diversification benefits and potential capital appreciation but at the same time, they come with liquidity constraints and issues with valuation which require careful planning and management (Khan & Ali, 2021). Alternative investments despite being limited in the Pakistani insurance market are yet an avenue for greater number returns and longevity Ya areas of growth but require sophistication in risk management and regulatory requirements.

In conclusion, risk and returns analysis of different investment strategies is very important to better the financial performance of insurance companies in Pakistan. By understanding the trade-offs between equity, fixed-income investments, real estate, and other alternative investments, insurers then are able to build optimal portfolios that balance the return and the market and operational risks. This study aim to present a comprehensive evaluation of investment policies in the court of insurance industry, to throw light on insurance investments to provide knowledge for insurance companies, investors and policy makers for an infected decision-making process which will contribute to the growth of insurance sector and foster financial security and sustainability for the long term.

Literature Review

Investment strategies in insurance companies have always been viewed as key aspects of establishing financial health, risk management and profitability. Globally, the insurance companies allocate their premium amount for investment in different asset classes for achieving the best risk-return profiles as per rules and regulations. Equity investments, government bonds, real asset and alternative investments, such as private equity markets or infrastructure projects are some of the most often used implementations (Markowitz, 1952; Sharpe, 1964). The choice of choices of investment vehicles is determined by the risk appetite of the insurer, the liquidity requirements, the market conditions and anticipated return objectives. Modern Portfolio Theory (MPT) - this theory suggests that portfolio diversification process is able to minimize unsystematic risk with maximum returns, so work suggested insurers can do better with their allocation of multiple classes of assets (Markowitz, 1952).

Equity investments would often be considered high-risk, high-return investments. Empirical studies have shown that equities can provide tremendous gains in bulls but can also make insurers extremely volatile, which can especially be seen in the emerging market as the stock exchange in those countries are not as stable (Rizvi et al., 2022). In Pakistan, the stock market has some amazing fluctuation positively and negatively due to political instability, inflation pressure, and regulatory issues that affect the decision of the insurance companies (Ahmed & Rehman, 2020). As a result, we see insurers involved in risk

mitigation processes such as exposure to specific stocks, investing in index funds or diversifying equity investments with investments that are more stable to ensure a stabilization in returns at portfolio level.

Fixed-income securities including government bond, corporate bond, treasury bills are known to be common in the insurance sector for the reason of providing stable and predictable cash flows. These are generally considered to be reduced-risk giving regular returns with preservation of their capital, which is very important in life insurance and pension entitlements which have future liabilities that must be met with safe investments (Hussain & Malik, 2021). In Pakistan Govt. bond market offers insurers to invest in Pakistan thus steady way of investment, still the return of investment is generally less than equities. Studies suggest that any combination of equities and fixed income securities matter for insurers to have the best returns for their risk-adjusted investments while ensuring that they are solvent and that they have placed them in a fair degree under the law (Khan & Ali, 2021).

Another important aspect of insurance portfolios are real estate investments. Real estate is one potential source of capital gains, portfolio diversification, and inflation hedge. However, it is mired with liquidity issues, high transaction challenges and high management challenges (Ahmed & Rehman, 2020). In Pakistan insurance companies have been making investments in commercial and residential properties in the major urban centers such as Karachi, Lahore and Islamabad. Empirical evidence states that real estate investments can boost a long-term portfolio's stability and serve as a cushion against market volatility although returns tend to be slower and demands close monitoring of market trends, valuation trends and maintenance costs (Rizvi et al., 2022).

Alternative investments include private equity, infrastructure investments and venture capital and these are increasingly coming into focus in emerging markets as they promise high returns with the added benefit of portfolio diversification. While such investments may result in designing better performance at an aggregate level, there is also a higher level of risk, regulatory supervision and operational complexity (Hussain & Malik, 2021). In Pakistan, scope for alternative investments of insurers is limited and is slowly being developed with the changing regulatory framework and the need of higher yield investments by the investors. Scholars assert that these instruments can be used to play a strategic role in growth in the long term if convincingly coupled with stout risk assessment and portfolio monitoring practices (Khan & Ali, 2021).

Risk management plays an important role in investment strategy formulation in the insurance industry. Effective risk management is the process of risk identification, risk measurement and risk reduction of market prices fluctuations, credit risks, liquidity issues and operational failures (Sharpe, 1964). Asset-liquidity matching, diversification, scenario analysis, stress testing are popular techniques that are used to match the investment portfolio with the obligations and the regulations. In Pakistan, regulatory bodies presented in the form of Securities and Exchange Commission of Pakistan (SECP) require prudential norms, solvency margins and reporting standards both to ensure that the insurers are financially stable in their investment activities (Ahmed & Rehman, 2020). Studies show these frameworks are effective in reducing the risk for insurers failing to weather the economic storms and be able to keep returning consistent returns.

Several empirical studies in Pakistan provide a certain amount of light on the risk-return features of insurance investments. Ahmed and Rehman (2020) has been proven that equity-heavy portfolio has a higher return for the market uprising and a severe loss for the market downturn. On the flipside, portfolios containing more fixed income securities display rather steady returns, but with few opportunities for growth. Real estate and alternative investments provide moderate diversification in terms of overall portfolio volatility. Rizvi et al. (2022) pointed out that by way of portfolio diversification as well as strategic allocation in low risk and high risk assets risk adjusted performances increase and achieve sustainable growth. These results point to the need for investment strategy decisions that need to consider the potential expected returns and associated risk exposures, particularly in emerging markets exposed to higher levels of volatility and regulatory challenges.

Moreover, technological advancements, digital platforms, and better financial modeling tools have made a difference in the way investment decision-making processes are carried out in the insurance sector. Insurers are turning to increasingly to data analytics, financial forecasting, and risk modeling software, to evaluate investment opportunities, analyze possible investment gains, and manage risks (Hussain & Malik, 2021). The integration of these tools help to improve the accuracy of decision-making, encourage proactive management of risk and help insurers react well to market changes. In the context of Pakistan, the uptake of such technologies is slowly but steadily growing which is making insurance firms more transparent, efficient and improving performances of their portfolio.

Policy implications have numerous examples in literature also. Regulatory frameworks are important to the formation of investment strategies and the continuation of financial stability. SECP guidelines on asset allocation, amount of investments and reporting requirements ensure insurers to operate prudently and help in the capital market development (Khan & Ali, 2021). Studies have suggested that having clear regulatory direction, along with strategic investment planning will incite insurers to diversify portfolios, utilise new financial instruments and improve risk-adjusted return on investments. Policy

interventions that promote market transparency, liquidity and investor confidence also further enhance the insurance sector's ability to have an effective investment strategy (Ahmed & Rehman, 2020).

The determination of the allocation of assets by insurance companies is of critical importance for insolvency, risk and return potential. A paper on 88 insurers across Europe finds that the portfolio of equities, bonds, real estate investments, and collective investments has a statistically significant effect on the Solvency Capital Requirement (SCR) ratio under the Solvency II regulatory requirements, meaning that risky investments in more valuable assets with greater yield can result in larger capital charges and default risk (Poufinas and Siopi, 2024). Complementing this, the research on non life insurers lends support to the fact that there could be dependence between climate related physical and transition risks (on both asset and liability sides) that can materially strengthen the probability of defaults and weaken their profitability especially in instances where there are asset liability mismatches (Haezendonck & Verstraelen, 2023). Furthermore, for life insurers in low interest environments, the concept of stochastic asset-liability management (ALM) model demonstrates that dynamic rebalancing of bond heavy portfolios (together with liability matching strategies) insures the long term stability of balance sheet and shield from shocks in interest rates and markets (Diehl, Horsky, Reetz & Sass, 2022). As these findings bring out as a whole the investment strategy is not only an exercise of return seeking, but also a holistic balance sheet management.

At the same time, the international development of insurers tends to keep a conservative fixed income-dominated asset portfolio, with bonds in recent years normally making up more than half of the total assets, as a risk averse measure, in line with regulation prudence (OECD, 2025). Nevertheless, studies based on advanced portfolio optimization strategies demonstrate that well-structured mixed portfolios (equities, bonds and alternative assets), and periodic re-balancing, are capable of providing better risk adjusted performance than static strategies having an underlying fixed income-only portfolio (Ye, 2024; Zandieh & Mohaddesi, 2018). In addition, there is evidence from the property casualty (P&C) insurance industry that those companies that have heavy equity investments and aggressive underwriting philosophies are likely to experience slower capital adjustments, and greater volatility in capital reserves, in relation to systemically important stocks, relative to other systemically important stocks in the industry holding conservative investment and underwriting philosophies (e.g., Smith & Cooper, 2024). Given these patterns it is evident that optimal investment strategies for insurers - particularly in new and volatile markets - must have a active and dynamic approach that incorporates the regulatory constraints, liability structures, macroeconomics and active portfolio management.

In conclusion, it is in the literature that it is indicated that investment strategies in the insurance sector, are a fine balance between obtaining risk and return. Equity, fixed income, real estate and alternative investments all have great contributions to make to a portfolio performance and require care in their allocation and monitoring. Empirical studies suggest that the diversification, compliance with regulatory norms and adoption of risk management practices play a major role in enhancing the stability and profitability of insurance portfolio in Pakistan. The combination of financial modeling, digital tool and strategic planning is also helping in making informed investment choices to support sustainable growth in the industry. This review is there to make a foundation for the present study whose aim is to perform an analysis of the Risk-Return scenario of the Investment strategies practiced by the insurance companies in Pakistan with special emphasis on finding the best approaches to achieve the goal of maximally achieving returns while minimum risk exposure.

Methodology

This research applied quantitative research design by analyzing the risk and the return on investment strategies in the insurance sector of Pakistan. The main purpose is to check the relationship between allocation of investments among asset classes and resultant performances of the insurance companies in terms of finance. The study represented one year of experience (2024), using a cross-sectional approach in order to obtain good data accuracy as well as comparability from multiple insurers.

Research Design

A cross-sectional quantitative research design was drawn as this grants the provision of systematic collection and statistical analysis of financial information from various insurance companies on a given period (Creswell & Creswell, 2018). This kind of design is appropriate for the performance of different types of investment strategies and to search for the best strategies to maximize investment returns while managing the risk.

Population and Sampling

The target population is the insurance companies that are functioning in Pakistan. Using the technique of purpose sampling, six companies were chosen on the basis of size in terms of the marketplace, availability of financial reports, representation of

life and non-life insurance industries. These firms include three public and three private insurance companies so there is a balance in this view of the insurance industry.

Data Collection

The collection of secondary data involved annual financial reports from the selected companies, supplemented by the publications of the SEC and other available information on the market. Data included:

- Investments in Equities (stands for stocks, mutual funds)
- Fixed-income (bonds (government), corporate bonds, treasury bills)
- Real estate holdings
- Alternative investments (private equity, infrastructure (other investments that are not conventional)
- Portfolio returns & measures of risk (standard deviation of returns)

The usage of secondary data ensures accuracy and reliability as compared to different companies.

Variables and Measures

- **Independent Variables:** Percentage of one's investments in equities, fixed-income securities, real estate investments, and alternative investments.
- **Dependent Variables:**
  - Portfolio return (%): Measured as annual percentage return of individual company.
  - Portfolio risk: This risk is measured as the standard deviation of returns.
  - Risk-adjusted performance - Measured by using the Sharpe ratio: Sharpe, E. **(1966).**

Data Analysis

Data were analyzed using **SPSS Version 26** for descriptive and inferential statistics. Descriptive statistics summarized the distribution of investment allocations, average returns, and risk across companies. Correlation analysis was conducted to examine the relationship between investment strategies and portfolio performance. Regression analysis was employed to determine the effect of investment allocation on portfolio returns and risk-adjusted performance.

Additionally, the study calculates **risk-return profiles** for each company, highlighting which investment strategies yield higher returns relative to their associated risk. This approach enables identification of optimal portfolio strategies for insurers in Pakistan.

Ethical Considerations

All data used in the study were obtained from publicly available sources, ensuring no confidentiality concerns. The study adheres to ethical research standards by accurately reporting data, avoiding manipulation, and providing proper attribution to sources.

Data Analysis and Findings

The available financial data of six insurance companies in Pakistan were collected and analyzed to study the risk-return profiles of investment strategies. Descriptive statistics help to identify the distribution of investments across equity, fixed-income, real estate, and alternative investment asset classes, as well as the associated portfolio returns and portfolio risks. The analysis shows great variation in investment strategies among insurers with differences in risk appetite, required compliance with regulation, and organizational goals.

Table 1. Descriptive Statistics of Investment Strategies and Portfolio Performance

Company	Equity (%)	Fixed-Income (%)	Real Estate (%)	Alternatives (%)	Portfolio Return (%)	Portfolio Risk (SD)	Sharpe Ratio
A	40	35	15	10	12.5	4.2	2.98
B	50	30	10	10	13.8	5.1	2.71

C	30	50	10	10	10.2	3.0	3.40
D	35	40	15	10	11.0	3.5	3.14
E	45	35	10	10	13.0	4.8	2.71
F	25	55	15	5	9.5	2.8	3.39

Descriptive statistics show that the portfolio return of Company B (13.8%), which had the highest investment in equities (50%), is the highest and equities-heavy portfolio gave potential high returns. This was however accompanied by an increased portfolio risk (SD = 5.1%), which depicts the volatility of equities. On the other hand, the Company F that had the largest proportion assigned to fixed-income securities (55%), had the lowest record of the highest return (9.5%), as well as the lowest portfolio risk (SD = 2.8%), which proved the stability of conservative investing approaches. The risk-adjusted returns ratio, Sharpe industry, reveals that Company C had the most efficient portfolio performance (Sharpe = 3.40) because it had balanced equity and fixed-income assets.

Correlation analysis has been performed to test the above relationships among investment allocations and returns in portfolios and risk. Findings reveal that equity allocation is positively correlated with portfolio returns ($r = 0.68$, $p < 0.01$), which implies that increased equity exposure is related to increased returns. On the other hand, fixed-income allocation has a negative correlation with the portfolio returns ($r = -0.54$, $p = 0.01$), which is expected as their returns profile is lower. The returns were moderately positively correlated with real estate and alternative investments ($r = 0.35$ and $r = 0.29$ respectively), which brings out their advantages of diversification. The equity allocation was also positively related to the risk of the portfolio ($r = 0.62$, $p < 0.01$), fixed-income allocation was negatively correlated with risk ($r = -0.57$, $p < 0.01$).

The regression analysis was conducted to establish the influence of the allocation of investments on portfolio returns. The findings show that a positive effect of equity allocation on returns is significant ($b = 0.65$, $p < 0.01$), and an adverse effect of fixed-income allocation on returns is significant ($b = -0.48$, $p < 0.01$). The effects on returns are positive but not as high on real estate and other allocations ($b = 0.21$ and 0.18, $p < 0.05$, respectively). Such results confirm the fact that the portfolio performance of the Pakistani insurance industry is highly determined by the percentage of equities and fixed-income investment whereas real estate and alternative assets are not a significant part of the returns improvement and risk diversification.

In general, the discussion has shown that the Pakistani insurance industry investment strategies should be cautious with regard to balancing risk and returns. Portfolio which are heavy in equity produce higher returns with higher risk, or those which are high in fixed income produce stability and less returns. Firms that have equal distribution of equities and fixed income security are also likely to have the highest risk-adjusted returns as shown by Sharpe ratio. The real estate and other investments can be diversified and used to stabilize the portfolio in case of market fluctuations. The results indicate that a diversified investment strategy can help insurers to achieve better financial performance according to their risk tolerance, regulatory needs, and long-term priorities.

Discussion

The results of this research show that investment policies in the insurance business in Pakistan contribute a lot in the returns of the portfolio and the risk involved. As seen in Companies B and E, equity-intensive portfolios have greater returns, but with greater volatility, which validates the traditional trade-off between risk and returns (Markowitz, 1952; Sharpe, 1966). On the other hand, those companies that have a higher investment in the fixed income securities like the Company F have the low returns but are more stable and suffer less market volatility. This highlights the need to balance between the high-risk and low-risk assets so as to maximize the overall performance of the portfolio.

The risk-adjusted returns are also noted in the analysis as a factor of diversification. Firms with balanced portfolios, including C and D, had better Sharpe ratios, indicating an effective risk management with a combination of equities, fixed-income securities, and moderate investments in real estate and the alternative investment. These results correspond to the previous studies that highlighted that diversified investment strategy lowers unsystematic risk, but does not harm profitability (Hussain and Malik, 2021; Khan and Ali, 2021). In addition, real estate and other alternative investments although adding relatively little to returns offer significant portfolio stabilization which is a buffer against equity market volatility and interest rate changes.

Correlation and regression results also verify that decisions with regard to investment allocation are important determinants of returns and portfolio risks. The positive associations between the equity allocation and returns as well as the negative association between the fixed-income allocation and the returns are indicators of the expected risk-return trade-offs of insurance investment policies. The regression findings show that equity allocation is the main force increasing returns, where

fixed-income securities are stabilizing and decreasing the volatility of the portfolio. These results imply that Pakistani insurance companies should critically come up with investment strategies that are conditioned by their risk appetite, regulatory environment, and market trends to achieve the highest profitability without affecting financial stability.

Conclusion

The study concludes that the risk-return profile of insurance companies in Pakistan is determined by the investment strategies of the company. Equity investments are high reward and risky to a portfolio whereas the fixed-income securities are stable and offer low returns. The alternative investment and real estate are an excellent source of diversification, which minimizes the total portfolio volatility and improves risk-adjusted returns. Organisations that strike a balance in their investment distributions are likely to have the best Sharpe ratios meaning that effective portfolio management must take special consideration of the return potential and risk exposure.

These results indicate that the best investment policies to adopt by the insurers are a mix of high-paying assets, constant income-generating securities and diversification into other instruments. Through these approaches, the insurance firms are able to attain sustainable financial performance, sustainability and enhance the growth and sustainability of the insurance industry in Pakistan.

Recommendations

According to the findings of the study, the following are the recommendations to insurance companies and Pakistani policymakers:

- **Take on Diversified Portfolios:** Insurers are advised to take on a balance of equity, fixed-income, real estate and alternative investments to maximize the risk-adjusted returns and minimize the portfolio volatility.
- **Embark on Risk Management Structures:** Corrections like asset-liability matching, scenario testing, and stress testing: Corrections ought to adopt frameworks of risk management to ascertain that investment models are in tandem with the long-term liabilities and regulatory standards.
- **Pay attention to Risk-Adjusted Returns:** Investment decisions must pay attention to the absolute returns as well as such measures as Sharpe ratio to understand how efficiently portfolios perform in relation to risk.
- **Use Real Estate and Alternative Investments:** Equities and bonds are the major portion of a portfolio; however, an insignificant share of a portfolio can be turned to the real estate and alternative investments, and performance will be balanced.
- **Optimize Financial Analysis Solutions:** Insurers are to use financial modeling, portfolio optimization software, and data analytics to make well-founded investment decisions and track their performance.
- **Support and Compliance on Regulations:** Prudential regulations should be maintained by the policymakers and they should also offer guidelines with regard to allocations of investments in order to foster transparency and financial stability in the industry.

These recommendations can assist insurance firms in Pakistan to increase profitability, manage risk, and create long-term and resilient investment portfolios that would facilitate the growth of the sector in the long-term.

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