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INSURANCE REGULATION AND THE CHALLENGES OF SOLVENCY II IN BOSNIA AND HERZEGOVINA: STAKEHOLDERS' PERSPECTIVES

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LIST OF ABBREVIATIONS

AIG - American International Group

AZOB&H - Insurance Agency of Bosnia and Herzegovina

AZORS - Insurance Supervisory Agency of Republic Srpska

BAM - The Bosnia-Herzegovina Convertible Mark

B&H - Bosnia and Herzegovina

EC - European Commission

EIOPA - European Insurance and Occupational Authority

EU - European Union

GDP - Gross Domestic Product

HHI - Herfindahl Hirschman Index

IDD - Insurance Distribution Directive

IORPS - Institutions for Occupational Retirement Provisions

MCR - Minimum Capital Requirements

NADOS - Insurance Supervisory Agency of the Federation of Bosnia and Herzegovina

ORSA - Own Risk and Solvency Assessment

PRIIP - Packaged Retail and Insurance-Based Investments Products

QIS - Quantitative Impact Study

SAM - Solvency Assessment and Management

SCR - Solvency Capital Requirements

Solvency II Directive - Directive 2009/138/EC of the European Parliament and of the Council on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II), UL EU L 335

UK - United Kingdom

UNECE - United Nations Economic Commission for Europe

USA - United States of America

VaR - Value at Risk

1 INTRODUCTION

Supervision and regulation of the insurance industry are vital to a healthy and sound financial system. Insurance firms are in charge of offering both individuals and corporations financial safety, and it is vital to regulate and oversee these organizations to ensure they offer sufficient protection. The significance of insurance regulation and supervision, its application, and its advantages will be covered in this thesis.

The insurance regulatory framework under the Solvency II Directive has been in place since 2016, and it represents a fundamental shift to a harmonized and sophisticated economic, risk-based regime (O'Donovan, 2017). It replaced Solvency I, which was a very simple capital regime that was used in conjunction with a variety of different national requirements. The Solvency II Directive is composed of three pillars: the first pillar pertains to quantitative requirements for the capital maintained by insurance companies, the second pillar pertains to qualitative requirements for risk management practices, governance, and control, and the third pillar is transparency to the market (Doff, 2008).

The insurance industry strongly supports the Solvency II Directive because it aims to align regulatory requirements with best practices in capital management, risk management, and governance that insurers already use (Insurance Europe, 2021). Stoyanova and Gründl (2014) argue that the Solvency II Directive could drive mergers and acquisitions in the non-life insurance sector. Lange (2018) also argues that Solvency II Directive measures will lead to further consolidation. However, they can have a stabilizing effect on the insurance sector during market turmoil.

Regarding the complexity of regulations, the new European Union (EU) insurance regulations, Solvency II, have attracted much debate (Eling et al., 2007). Like other regulations, the main goals of the Solvency II Directive are to protect policyholders and to create a safe and sound industry. Nevertheless, the extent to which Solvency II accomplishes its objectives is uncertain due to its inherent complexity. Undoubtedly, there is a valid argument that the intricate nature of Solvency II makes it less understandable, less transparent, and, hence, less efficient (Eling, 2021).

As Klumpes and Morgan (2008) suggest, Solvency II will require all insurers to formally assess their risks to assess what capital they need, which will be subject to regular monitoring and reporting to regulators. The new Solvency Directive aims to enhance the stability and reliability of the insurance sector (Buckham et al., 2010). Eling and Pankoke (2013) analyze the effects of the standard model application and make a strong case for the development of internal models. However, Cifuentes and Charlin (2016) found that applying the standard formula provides diversification benefits concerning operational risk.

As the dynamics of insurance markets evolve, it is imperative for regulatory institutions to adapt accordingly to supervise them (UNECE, 2012) effectively. Despite the unpredictable nature of the financial sector, shifting global economies, and the advent of new hazards in the past five decades, the consistent expansion of captives has remained a reliable component. In his publication, Bernardino (2015) discusses Solvency II as a rule that is both rational and successful in the context of evolving insurance regulation. He argues that Solvency II does not hinder innovation. European captives have started planning for and implementing Solvency II's regulatory requirements, which emphasize risk management. This process began before January 2016. European captives are recognizing the benefits of Solvency II, such as enhanced governance, risk management, and the utilization of intellectual capital, despite the difficulties and expenses associated with higher capital charges and compliance costs. Captives continue to evolve and thrive (Marsh, 2016), proving their efficacy, adaptability, and stability.

Although Solvency II is a European regulation, its impact extends beyond the European Union. Insurance companies in the EU have subsidiaries in other markets, and insurers in other markets have subsidiaries in the EU. Many countries consider the adoption of the directive or the modification of current regulations to align with it. Given those insurance companies with a majority of foreign capital (EU countries) account for 54.38% of total premiums and 97.65% of the life insurance market in Bosnia and Herzegovina (AZOBIH, 2021), it is reasonable to consider the implications of Solvency II for insurance companies in Bosnia and Herzegovina.

Therefore, this thesis aims to identify the benefits and challenges of Solvency II implementation from stakeholders' perspectives in Bosnia and Herzegovina (B&H). Considering the complexity of Solvency II Directive requirements applied in the EU developed countries, on one side, and all the difficulties of B&H, as a developing country and its insurance industry, on the other, this thesis will help us understand all the challenges that insurance stakeholders in B&H are facing regarding Solvency II Directive implementation.

Therefore, the main research question is whether the EU regulatory and supervisory requirements represent an opportunity or a burden both for the regulatory and supervisory authorities and insurance companies in B&H. The research questions to be examined in this master’s thesis and through the interviews are current regulatory and supervisory trends and developments in B&H when it comes to the insurance industry, current regulatory and supervisory trends and developments on the B&H level, and the perception of insurance stakeholders in B&H when it comes to the impact of Solvency II implementation on the insurance industry in B&H.

The objectives stemming from the purpose of the thesis are the following:

(1) to present the insurance regulation and supervision development in the EU and the current state of the insurance regulation and supervision in B&H.

(2) to understand the implications of the Solvency II Directive to the insurance companies in B&H.
(3) to identify the benefits and challenges insurance stakeholders face in implementing the Solvency II Directive.
(4) to provide recommendations for the insurance industry in B&H based on the perspective of insurance stakeholders in B&H received through the interviews conducted.

This research methodology incorporates both theoretical and empirical components. Theoretical foundations for the research topic were based on relevant literature, academic sources, and research papers gained through reports written up to date on the subject matter. It also included the literature written by research scholars and universities published in academic journals and books. It provided an understanding of the EU regulatory and supervisory developments in the insurance industry and its reflection on the insurance industry in B&H. The empirical part of the research, a comprehensive analysis of the insurance market in B&H, was based on primary and secondary data. Primary data focusing on qualitative data were gathered through semi-structured interviews to understand the insurance market from the stakeholder's perspective. For analysis of the insurance market, secondary data were collected from international institutions such as the European Commission (EC), the European Insurance and Occupational Authority (EIOPA), the United Nations Economic Commission for Europe (UNECE), and others, as well as from official publications published by regulatory and supervisory authorities of the insurance market in B&H.

The interviews were conducted with relevant decision-making individuals and experts from the regulatory and supervisory authorities and the insurance companies in B&H. Questions were structured so respondents could answer about the current situation in the insurance industry, both from the side of the insurance companies and regulatory authorities. Questions were related to obstacles and issues of Solvency II implementation in B&H, including the cost of implementing and complying with the new solvency assessment and management regime, the appropriateness of the Solvency Assessment and Management (SAM) regime for insurers, and the sustainability of small and medium short-term insurers in B&H. Upon completion of the interviews, answers were collected and analyzed. Based on the perspective of insurance stakeholders received through the interviews, recommendations will be provided for the insurance industry in B&H. This will be useful for those who seek best practices and approaches in the insurance regulation and supervision of the country.

This thesis first addresses the theoretical background of insurance regulation and supervision, followed by key concepts and ideas of the subject matter, regulatory and supervisory framework in the EU, development of insurance supervision before and after the financial crisis, and Solvency II lessons and challenges covered in Chapter 1. The Solvency regulation is thoroughly elaborated in Chapter 2 with an overview of the main risks insurance companies face, followed by the objective and structure of the Solvency Directive. Chapter 3 is focused on the insurance industry in B&H, providing further details about the supervisory structure and insurance legislation of the country, followed by the analysis of the insurance market and performance indicators, as well as activities related to the harmonization and potential implications of the Solvency II Directive. In Chapter 4, the research framework is presented, along with the research objectives and research methodology and design. Chapter 5 describes the analysis and results of the answers received from the insurance stakeholders: regulatory and supervisory authorities, an actuary association, and insurance companies in B&H. Finally, based on the results discussed in previous chapters, Chapter 6 represents the conclusion of the thesis with recommendations for further development of the insurance market in B&H.

2 INSURANCE REGULATION AND SUPERVISION

Regulation and supervision are two pillars of public oversight in the insurance industry, primarily for consumer protection. Regulation involves law-making, and supervision involves monitoring, control, and enforcement. They are separate but dependent on each other. Regulation is associated with state political structures, while supervision is more technical. To function properly, regulation must be immune from direct political pressure. However, regulation and supervision must align, as the effects of best regulation may disappear if supervisory functions are not implemented properly (Schoenmaker, 2011).

A regulation is a set of regulations imposed by the government, either the legislative or executive branch, together with penalties, to alter the economic behavior of individuals and businesses in the private sector. In the context of the insurance industry, the purpose of insurance regulation is primarily to safeguard the interests of policyholders, enhance the stability and strength of the insurance market, and prevent any improper conduct by insurers and their associated service providers (Llewellyn 2006). To secure system stability and sound performance of insurance companies, and to minimize insurance company bankruptcy and under-pricing brought on by competition, regulation is crucial. Capital requirements are one way to control the market and should be the primary means of overseeing insurance businesses. This is accurate if oversight and regulation make insurance companies more risk-averse. This may also mean fewer problems with asymmetric information and moral hazard.

Rejda and McNamara (2017) argue that the insurance industry should not be viewed in isolation because it is a larger component of the financial services industry. In addition, opponents argue for a comprehensive reform and reorganization of the financial services regulatory framework, including the insurance sector.

Liedke and Monkiewicz (2011) foresee that the new regulatory and supervisory framework should be very forward-thinking, anticipating future trends. As they point out, insurance regulation and supervision should promote active risk management at the level of each insurance and reinsurance company. When a risk emerges and evolves, regulators should send an appropriate message to insurance companies to alert them to the risk. Quaglia (2011a) states that the EU reformed the insurance regulation and supervision framework in the late 2000s with the Solvency II directive, which significantly updated prudential rules and supervisory practices.

The following is an outline of the section. First, key insurance concepts and ideas will be presented. Second, introducing the solvency regulation to the industry will give a quick overview of the regulatory and supervisory framework in the EU. Third, insurance supervision before and after the financial crisis is discussed, and the fourth sub-section covers a discussion of key Solvency II supervisory lessons and challenges.

2.1 Key concepts and ideas

Regulation is crucial to prevent underpricing and bankruptcy in insurance companies, with capital requirements as a first defense line. Effective risk management is essential for financial system resilience, as insurers are liable for future claims based on frequency, value, and timing.

Solvency refers to the capacity of an insurance company to meet its financial commitments. The primary objective of regulation is to safeguard the interests of policyholders, third-party liability claimants, and other participants in the market.

Insurance companies act as financial intermediaries to mobilize savings and investments in the corporate sector. The insurance industry reverses the traditional operating cycle, collecting premiums in advance and disbursing claims-based payments. This can lead to underpriced premiums, putting policyholders at risk. The insurer's financial solvency is crucial for customer trust. Monitoring insurers' solvency is challenging due to the insurance market's intricacies.

As Hoppendorff (2011) rightfully points out, regulations are needed to address issues like ambiguity, moral hazard, risk aversion, asymmetric information, and agent problems. Despite the high demand for solvency regulation, solvency protection is preferred. Insurance companies act as financial intermediaries to mobilize savings and investments in the corporate sector. The insurance industry reverses the traditional operating cycle, collecting premiums in advance and disbursing claims-based payments. This can lead to underpriced premiums, putting policyholders at risk. The insurer's financial solvency is crucial for customer trust. However, monitoring insurers' solvency is challenging due to the insurance market's complexities.

The insurance industry's economic and social impact makes a public prudential supervisory system necessary. Insurance company insolvency can have high costs for customers and society, as policyholders buy insurance to protect against losses, but insolvency can also affect third parties' economic existence. Imperfect information on insurance company solvency status and severe consequences make regulating the industry of public interest (Holzmuller, 2009). Regulation can potentially mitigate the risk of insurer insolvency; however, it can also distort the decisions of financially sound insurers, resulting in market inefficiencies and increased premium prices. Policyholders may experience an illusion of security due to inadequate regulatory frameworks. The evolution of capital regulation has initiated the formulation of new regulations by European and national legislators, as risk-sensitive requirements have replaced volume-driven requirements. The financial industry has witnessed convergence in risk management across three dimensions: capital markets, financial institutions, various categories of institutions, and national jurisdictions. Establishing integrated supervisors has bolstered the convergence of prudential frameworks in banking and insurance, thereby diminishing differences across functional lines (Cappiello, 2020).

2.2 Regulatory and supervisory framework in the European Union

The EU has implemented progressive regulatory standardization since the 1970s, introducing a single insurer license. The "third generation" Insurance Directives introduced a single license for insurers, aiming to standardize provisions on capital requirements (solvency margin).

The Solvency I regime, which regulates the supervisory framework for insurance businesses, enhanced oversight by mandating the maintenance of Solvency Capital Requirements (SCRs) and broadening the intervention powers of supervisory bodies. The Solvency I calculation techniques remained unaltered, where the solvency margin is determined as a proportion of technical provisions in life insurance and a proportion of yearly premiums or average cost of claims in non-life insurance. Nevertheless, the method used to calculate capital requirements had limitations, such as using almost exclusive rates for technical factors, which were occasionally insufficient in accurately estimating portfolio risks. The Solvency I calculation mechanism did not consider the qualitative characteristics of the insurance portfolio or the loans made to hedge it. This might result in a lack of alignment in managing assets and liabilities. The legislation is criticized due to issues over the relationship between prudential technical provisions regulation, investments, diversification benefits, and the solvency margin's reliance on balance sheet values. Simply meeting capital requirements is insufficient to ensure solvency unless backed by meticulous corporate policies and sufficient risk control mechanisms (EIOPA, 2018). In the European insurance industry, the Solvency I led to fragmented regulation, with each country independently deciding on solvency margin calculation methods. This inhomogeneity resulted in varying levels of strictness and risk-based regulation. The growing internationalization of the insurance industry further impacted prudential regulations, prompting the EU to review the prudential supervisory regime for insurance companies (European Commission, 2007).

In 2001, the Solvency II project was launched to advance the convergence of international and intersectoral regulation in the insurance sector by innovating prudential supervision regulations. The Directive's transposition into EU legislation has been multifaceted, with corrections introduced in 2014 and amended by Directive 2014/51/EU (Omnibus II). The Directive was finally set for all Member States on 1 January 2016. The new regulatory framework significantly changed the supervisory system for insurance undertakings. It adopted a dynamic risk-based approach to measure risks and improve performance and efficiency. The framework acknowledged the importance of conscious management in preventing crises and adopted a global solvency approach.

The regulatory system focuses on three pillars: quantitative requirements of prudential supervision, qualitative requirements (corporate governance, internal control, risk management), and information and market discipline (supervisory reporting and public disclosure). The objective of Solvency II is to guarantee that companies have the necessary capital to address a variety of business risks and to cultivate a genuine business risk culture. It necessitates that companies maintain adequate funds to cover the SCR, which is determined under the assumption of business continuity. Cappiello (2020) reasons that the supervisory approach motivates companies to implement internal models that precisely document the interdependencies between risk categories. Supervisory authorities can compel companies to establish an internal model. Companies implementing sophisticated risk management systems, and sufficient risk mitigation or diversification strategies have reduced capital requirements.

The extent of the Solvency II directive is significantly greater than that of Solvency I. It applies to all life and non-life insurance undertakings and reinsurance undertakings, with certain exemptions for minor mutual undertakings. The objective is to simplify EU legislation by substituting 14 extant directives with a single one. The directive is predicated on the risk-based approach of the Basel II accord, which mandates that insurers maintain capital to mitigate market, credit, and operational risks. It delineates two capital requirements: the SCR for absorbing substantial losses and the Minimum Capital Requirement (MCR) for supervisory action (Commission, 2004). Insurers can use their internal model to calculate capital requirements, similar to those introduced in the United Kingdom (UK) by the 2004 domestic insurance regulation reform. The term SCR in the UK is called 'Enhanced Capital Requirement'. In the EU, it is called the SCR for political correctness. The Solvency II directive includes a supervisory review process for insurance undertakings, requiring additional capital if necessary. It also harmonizes supervisory activities and mandates information disclosure to enforce market discipline. These pillars align with the UK's existing regulatory framework, although market disclosure is absent in other EU member states. The most controversial issue is the creation of group support and supervision involving a single authority for each insurance group (European Commission, 2007). Group support refers to group capital management, allowing parent undertakings to use declarations of group support to meet subsidiary SCR (Quaglia, 2011b). France, Germany, Italy, and Belgium endorsed the proposal for a group supervision and support regime in the European insurance industry. They contended that it would enhance the international competitiveness of the insurance industry, streamline supervisory requirements, improve group supervision, facilitate cross-border group activity, and complete the single market in insurance. Nevertheless, 12 member states, including Poland and Spain, opposed the proposed approach. Opponents of group supervision in the UK insurance sector contended that it would diminish the authority of supervisory host authorities and leave them to address local issues. It is possible that the UK treasury was hesitant to advocate for group support and supervision due to a shift in the regulatory climate during the 2000s. The UK authorities would serve as the group supervisor for numerous insurance groups headquartered in the country. The results of negotiations were a legally binding commitment to review the controversial issue three years after the legislation's implementation and a watered-down form of group supervision.

2.3 Insurance supervision before and after the financial crisis

The 2008 financial crisis has resulted in a prevailing inclination to hold the financial sector responsible for the economic condition of the Eurozone, with certain institutions being more accountable for the elevated levels of unemployment and diminished investment. Nevertheless, the insurance industry is not accountable for 33% of the unfortunate events. Stringent regulation of the insurance industry is necessary to enhance general well-being. European regulation aims to stimulate economic growth and create jobs by implementing appropriate microeconomic incentives. An authentic European insurance market is necessary to facilitate the unrestricted movement of students and workers within the Union, promoting employment opportunities and economic progress (Pradier & Chneiweiss, 2017).

While the insurance sector's solvency is not threatened, companies from that sector have been affected mostly adversely. Concentrated exposures to credit and market risks have been revealed in the United States of America (the USA) mortgage and financial guarantee insurance companies and certain other insurance-dominated financial groups. The role of the insurance function in this crisis has stabilized the system as a whole, with insurance companies typically having longer-term investment horizons than other financial institutions. However, the crisis has also shown that some insurance companies have accumulated significant exposure to credit default derivatives on one or the other side of their balance sheets. The expansion into investment-bank-like activities of financial companies conducting insurance business has led to asset returns being more closely correlated than during normal times and more so than expected. This has made the group's buffer adequate, particularly regarding capital cushion. The accumulating empirical evidence suggests that specific incentive problems may arise in complex financial groups when different parts of the group, which pursue different activities or generate different risk profiles, use the same capital base or benefit from capital raised via less risky members of the group, such as American International Group (AIG) (Schich, 2010).

As a result, it is imperative to establish robust insurance sector regulation to enhance the general welfare. European regulation aims to maximize employment and economic growth by implementing appropriate microeconomic incentives. The European insurance sector has progressively addressed the protection of retail policyholders, transitioning from a fragmentary product-based approach to a comprehensive monitoring and supervisory framework. This transition has shifted from conventional transparency to responsible finance and consumer centricity, increasing the responsibility of insurance undertakings and distributors. Despite its unevenness, it is beginning to provide consumer protection (Monkiewicz & Monkiewicz, 2020).

The financial crisis has intensified the emphasis on the regulation of financial institutions, such as insurance companies. Life insurers were notably impacted by their investments in real estate-related assets and mortgage-backed securities. The crisis resulted in a severe economic recession and a decline in stock prices, resulting in additional asset losses for life and non-life insurers. The role of insurance companies in the financial economy and their susceptibility to systemic risk have become substantial concerns for policymakers and regulators. However, they have not resulted in insurer insolvencies.

Klein (2012) observed that potential market failures in insurance may result in excessive financial risk or abusive market practices that affect consumers, as well as severe asymmetric information problems and principal-agent conflicts. Insurance consumers encounter difficulties in evaluating the financial risk of insurers and comprehending insurance contracts. Systemic risk is the potential for a market or financial system to experience severe, potentially calamitous instability due to idiosyncratic events or conditions in financial intermediaries. Market problems, such as the unavailability of insurance coverage and high prices, are not failures in the economic sense; rather, they are undesirable market outcomes that result from conditions that affect the cost of risk. The objective of government intervention in the event of market failures is to enhance or restore economic efficacy. To replicate the conditions of a competitive market and optimize social welfare, optimal regulation is predicated on an ideal set of policies. Nevertheless, it is not always possible to address all market failures through regulation. The desirability of a specific regulatory intervention must be evaluated about the ability of regulators to address a specific market failure and any deadweight costs that may exceed the benefits of the intervention.

The financial crisis encouraged global regulatory action to enhance consumer protection, reduce systemic risks, and enhance corporate transparency. This strategy was demonstrated by the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 and Basel III for banking. From 2008 to 2018, the EU implemented more than forty financial service legislation, emphasizing insurers as part of its more activist approach. The European Insurance and Occupational Pensions Authority (EIOPA), Solvency II requirements, the Institutions for Occupational Retirement Provisions (IORPS II), Packaged Retail and Insurance-Based Investments Products (PRIIP), and Insurance Distribution Directive (IDD) are among the most significant developments (Emond & Kunertová, 2019).

2.4 Solvency II: supervisory lessons and challenges

The adoption of Solvency II marked a transition towards a proactive and risk-oriented method for evaluating solvency. The Solvency II framework placed significant emphasis on governance and risk management while implementing new capital management and disclosure standards. Inadequate capitalization has not consistently been the predominant cause of failure. Inadequate leadership and faulty risk evaluations have had a more substantial impact. Risk management plays a crucial role in insurance governance systems as it entails the management of risks and the functions of management. Insurance and reinsurance providers must build an operating system following Solvency II standards.

From a supervisory perspective, insurance companies must implement the required organizational structure modifications following Solvency II for the risk management function to carry out its duties efficiently, with operational independence and direct access to the board. Specifically, there must be an adequate supply of resources and personnel with the appropriate degree of risk management expertise in the risk management function.

Solvency II requires a more proactive approach to managing risk and a greater focus on the whole role of risk management and the board members' capacity to integrate risk into their strategic decision-making. Therefore, it is necessary to consider any future plans for business expansion and other changes that may impact the operations of insurance firms. The Own Risk and Solvency Assessment (ORSA) is a powerful risk management instrument. It provides a framework for insurers to evaluate their risk management and solvency in a forward-looking manner. ORSA encourages a broader perspective on the complete business and a more holistic approach to quantitative and qualitative risk instead of solely focusing on financial risk (Bernardino, 2017).

It is a comprehensive insurance regulatory framework that enhances financial stability, risk management, harmonization, and consumer protection. The work of Pillar 1 has been evaluated in terms of market consistent valuation, capital requirements, asset and liability management, pro-cyclicality, product design, ORSA, liquidity, disclosure, and the implications of Brexit. Although Solvency II substantially improved over Solvency I, it has not completely realized its objectives. Modifications to Solvency II will probably be implemented, and there are still reservations regarding market consistency and procyclicality (Rae et al., 2018).

The Solvency II review is crucial in the current economic climate, climate change risks, and low interest rates. The framework's robustness and flexibility have helped mitigate market volatility and avoid procyclical behaviors. However, improvements are needed to address challenges like business interruption protection and the existing insurance protection gap.

3 THE SOLVENCY REGULATION

The Solvency II Directive promotes a comprehensive, economic, and risk-based approach to insurance supervision. The financial status of insurers should be precisely represented by the supervisory framework, which should align asset and liability valuations with market data and information on insurance and reinsurance risks, encompassing all aspects of the business. This framework aims to promote the effective management of risk and capital by insurers, thereby reducing the likelihood of financial challenges, insolvency, and the need for regulatory intervention. Reinforcing supervisory oversight, enhancing transparency and disclosure, and instituting risk-based capital requirements that consider the unique risk profile of each company, the system should provide incentives for insurance companies to improve their daily operations. Solvency II should enhance supervisory collaboration and convergence to enhance the supervision of pan-European groupings and further integrate the EU insurance market. European insurance legislation aims to guarantee adequate consumer protection while fostering a unified insurance market (Starita et al., 2014).

3.1 Risks faced by insurance companies

Uncertainty has historically been the defining characteristic of risk. Risk is defined by this concept as the uncertainty surrounding the probability of a loss (Rejda, 2017). Life and non-life insurance companies are required to evaluate the hazards they encounter to adhere to Solvency II standards. To establish insurance rates, insurance companies must identify specific hazards. The inherent uncertainty of numerous hazards that individuals encounter renders them uninsurable. For insurers and policyholders to capitalize on a contract, an insurable risk must be established in contrast to the uncertainty of quantifiable outcomes. Risks must be specified about a specific sequence of events within a specific time frame. Volatility, uncertainty, and extreme events are the primary parameters that must be considered for each hazard in risk modeling (Buckham et al., 2010).

3.1.1 Key components of risks

The insurance industry plays a crucial role by engaging with all major societal institutions to establish governance mechanisms, manage risks, take risks, and provide security (Ericson & Doyle, 2004). Insurers must incorporate volatility, uncertainty, and extreme events as crucial risk components when calculating risks for each hazard (Insurer Assessment Working Party, 2004).

3.1.1.1 Volatility

The risk of a random variation in the frequency or severity of an unforeseen event is referred to as volatility. The risk's deviation from its anticipated or average outcome is evident. As the total independent insured risk increases, the volatility of the average claim amount decreases, indicating that the risk is diversifiable (Insurer Solvency Assessment Working Party, 2004).

3.1.1.2 Uncertainty

The term "uncertainty" refers to the possibility that the models employed to estimate the requirements or other processes are inaccurately specified, a risk frequently referred to as "model error." Uncertainty also encompasses the possibility that the parameters in the employed models are inaccurate and may fluctuate over time. The risk of uncertainty is non-diversifiable, as the portfolio scale does not reduce it (Insurer Solvency Assessment Working Party, 2004).

3.1.1.3 Extreme Events

Extreme events in a company can have high-impact and low-frequency fluctuations, requiring independent management strategies. These one-time shocks can affect risk fluctuations and the amount of capital needed to cover these risks, making it difficult to estimate the loss value accurately (Insurer Solvency Assessment Working Party, 2004).

3.1.2 Main Risk Types

According to the Insurer Solvency Assessment Working Party (2004), the five main risk types are underwriting, market, credit, operational, and liquidity risks, as illustrated in Figure 1. These risks, except liquidity risk, are the foundation of the capital requirement within Solvency II and are followed up by either a standard or internal model (Buckham et al., 2010).

Figure 1: Main types of risks in insurance

Source: Adapted from ResearchGate (n.d.).

3.1.2.1 Underwriting risk

The insurance company identifies underwriting risks and provides coverage by selling insurance contracts. All contracts assume a risk with an uncertain likelihood of happening, which is compensated for by paying a premium (Insurer Solvency Assessment Working Party, 2004). Underwriting risks refer to losses that differ from expected insurance outcomes due to insufficient risk assessment and selection processes. Standardized contracts can improve predictability and homogenize underwriting results. To minimize risks, set risk selection and approval criteria, and ensure adequate pricing to support obligations. Product design can reduce risk exposure (Buckham et al., 2010).

3.1.2.2 Market risk

Market risks typically stem from fluctuations in the value of investment assets (Insurer Solvency Assessment Working Party, 2004). The most critical factor for life insurance companies is market risk. This is contingent upon the duration of the funds, which must be under long-term obligations. It is impossible for an insurer's investment portfolio to accurately represent its liabilities due to the uncertainty surrounding future payments. The vulnerability of a financial institution to market risk can be conceptualized in terms of loss distribution, which is referred to as Value at Risk (VaR). This is the most significant loss likely to occur within a specific time frame with a specific probability. Interest rates, equity prices, property prices, currency prices, and concentration risk are all factors that influence VaR (Buckham et al., 2010). Interest rates significantly impact financial instruments' value, affecting liabilities and assets. They are the primary risk driver for bonds and fixed-income securities while affecting liabilities. Non-life insurers often hold assets longer than liabilities, causing an increase in interest rate harm to equity value. However, some instruments can hedge interest rate risk (Buckham et al., 2010). The value of equity, property, and foreign exchange currency may decline due to changes in prices and rates. Hedging instruments exist for foreign exchange exposures and equities, but property instruments are unmarketable due to varying risks. Concentration risks arise from a lack of diversification across sectors (Buckham et al., 2010).

3.1.2.3 Credit risk

A substantial portion of an insurer's investment portfolio is allocated to bonds, with the majority invested in corporate bonds. Credit risk refers to the possibility of a counterparty failing to fulfill its obligations regarding assets held in an investment portfolio. This risk arises from the insurance company's exposure to counterparties, such as mortgagors, through reinsurance contracts or derivatives. Settlement risk, a credit risk component, arises from the time gap between the valuation and settlement of a security. The settlement risk is thus linked to the risk of a fluctuation in value. The credit risk of an investment portfolio is determined by the loss distribution associated with credit VaR or VaR of market risk. Furthermore, insurers can utilize reinsurance, which can lead to reinsurance default risk becoming a significant factor in their exposure to credit risk. The potential failure of reinsurance could jeopardize the financial stability of the insurance firm in the event of a disaster. Consequently, it is crucial to meticulously and comprehensively evaluate the financial soundness of the reinsurer. It is important to consider factors such as credit ratings and diversification among reinsurers to optimize the extent of coverage they provide (Buckham et al., 2010).

3.1.2.4 Operational risk

Operational risk refers to losses resulting from incomplete or failed internal processes, systems, external events, or people. It includes legal risks but excludes strategic, business, and reputational risks. Quantifying operational risk is challenging due to the lack of internal data and the difficulty distinguishing between market, credit, and underwriting risks (Buckham et al., 2010). Insurance companies must assess the portion of underwriting losses resulting from insufficient or incorrect underwriting processes (Insurer Solvency Assessment Working Party, 2004). Operational risks expose distinct characteristics in terms of risk and return compared to other types of risks. Unlike financial risks, increasing operational risk does not lead to an increase in return on equity. Instead, it undermines the company's overall value as it is linked to the risks associated with its operations rather than its financial aspects. Gaining a comprehensive understanding of the operational risk attributes of business processes, systems, and products is crucial. Hence, regular upgrades are necessary. Implementing continuity plans should mitigate operational risks that potentially harm the business significantly. These plans provide a framework for the organization to follow in the event of unexpected disruptions to ensure the business can continue operating smoothly. Insurance should be regarded as a safeguard against rare and significant events that can potentially cause severe financial losses (Buckham et al., 2010).

3.1.2.5 Liquidity risk

Liquidity risk occurs when there is inadequate liquidity to buy or sell an investment swiftly, resulting in potential losses that cannot be minimized or avoided. Liquidity risk can be categorized into asset liquidity risk and funding liquidity risk. Asset liquidity risk refers to the failure to execute a transaction at the expected market price. It is influenced by markets that lack liquidity or are in turmoil, and it happens when an asset is sold to fulfill funding needs but fails to achieve its anticipated value. Life insurance firms face a significant problem managing asset liquidity risk since their long-term investment horizon may make it difficult to execute transactions at the expected market price. Non-life insurance companies often do not have the same level of asset liquidity risk as life insurers because their assets and policies have shorter durations. Nevertheless, liquidity strains arise when there is a decline in contract renewals or sales of new contracts, particularly for non-life insurers. This susceptibility is exacerbated in the event of a catastrophic occurrence (Buckham et al., 2010). Funding liquidity risk occurs when there is a need to fulfill obligations or repay deposits (Buckham et al., 2010). Insolvency refers to the situation where an insurance company is unable to fulfill its financial obligations promptly (Drehmann & Nikolaou, 2010). Liquidity risk is distinct from other risk categories as it is specifically addressed under the risk management framework of Pillar II, as outlined in the next chapter, Solvency II Directive. However, liquidity risk typically strongly correlates with one or more of the other four forms of risk. The liquidity risk is influenced by changes in market conditions, credit conditions, and policyholder behavior. Hence, a comprehensive examination of the potential influence on cash flow trends is required to assess liquidity risks (Buckham et al., 2010).

3.1.3 Reinsurance

Reinsurance is a risk management tool for insurance companies, transferring risk to another party and reducing capital required by mitigating risks and reducing assets (Insurer Solvency Assessment Working Party, 2004). Buckham et al. (2010) suggest diversifying catastrophic risks reduces uncertainty, volatility, and extreme risk, reducing capital pressure and promoting a stable profit stream. Insurance companies can use reinsurance to shift risk off the balance sheet (Schwarz et al., 2011). An insurer's capital is determined by the difference between assets and liabilities, and paying a premium to the reinsurer would decrease the assets (Botzen et al., 2010).

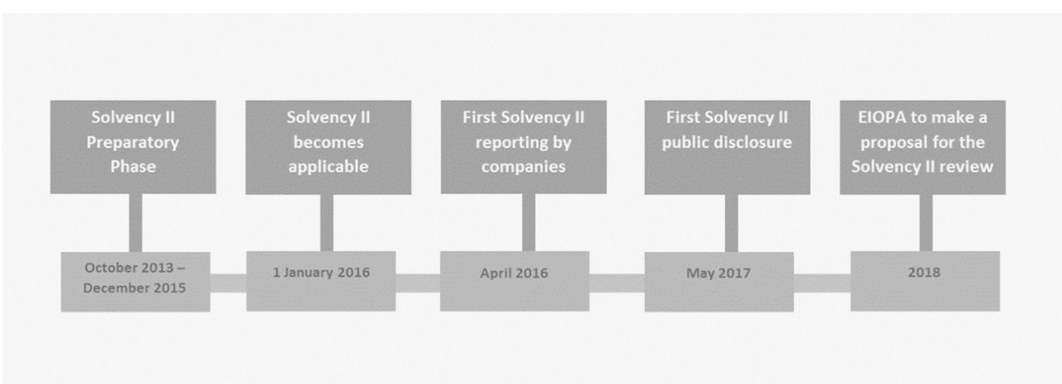
Reinsurance companies secure future payments for policyholders by transferring risk to insurers, who charge a fee in return. They mitigate risk by diversifying their portfolio worldwide (Bank of England, 2015). Reinsurers exert a stabilizing influence on the local insurance markets. Reinsurance firms face the potential of systemic risks, which refer to the possibility of a complete collapse of a financial market, leading to instability in the overall financial system. Examples of systemic hazards include natural disasters, financial crises, and technological failures. A low interest rate is a specific instance of a systemic financial danger.

3.2 The Solvency II Directive

The European Commission and the European Insurance and Occupational Pensions Authority developed the Solvency II Directive, which was adopted as EU legislation in 2009. The directive covers both life and non-life European insurance companies and was postponed in 2013 and amended in 2014. Solvency II was enacted on January 1, 2016, for both life and non-life European insurance companies (European Commission, 2015).

In 2017, as part of Pillar 3 of Solvency II on disclosure, all (re)insurance companies disclosed a report on their solvency and financial condition to the public for the first time. May 2017 marked the publication of the initial reports for the conclusion of 2016. Revisions were already in the works to revise the method of calculating capital requirements under the standard approach in 2018 and to evaluate the application of the long-term guarantee measures and measures on equity risks in 2020, when the Solvency II Directive was introduced. Figure 2 illustrates the adoption and review process of the Solvency II Directive. The European Commission requested that the extent of EIOPA's Opinion on the 2020 review of Solvency II be expanded beyond the Directive (EIOPA, 2022).

Figure 2: The Solvency II Directive adoption and review process



Source: Adapted from Trade Finance Global (2016).

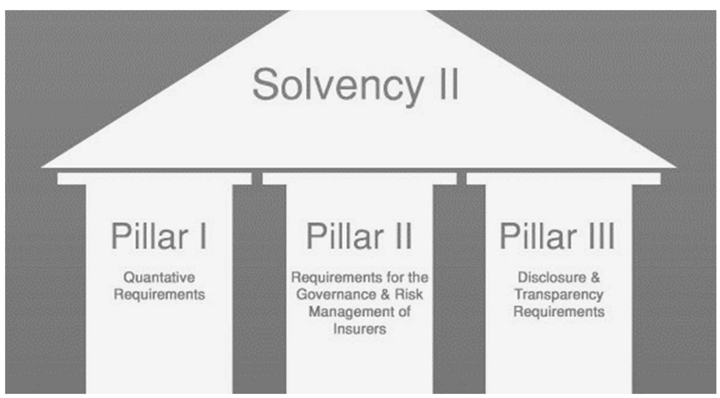
3.2.1 Objective of the Directive

Insurers always meet their obligations to policyholders. Insurance companies must be solvent to prevent a company from delivering on this promise, meaning they must have capital available. Consequently, it is crucial to establish appropriate standards for the solvency of insurance companies. The capital base's risk was not accurately reflected in the previous Solvency directive, and there were no supportive risk management practices. Furthermore, the intervention in the event of insolvency was restricted due to the insufficient warning and power of supervisors and regulators. By implementing a significant overhaul of capital requirements, risk management models, and market transparency, Solvency II enhances the protection of policyholders. The new Solvency Directive aims to enhance the stability and dependability of the insurance sector (Buckham et al., 2010).

3.2.2 Structure of the Directive

Solvency II consists of three pillars. The first pillar of Solvency II pertains to quantitative requirements regarding the capital holdings of insurance companies. The second pillar concerns qualitative requirements regarding risk management practices, governance, and control. The third pillar pertains to transparency in the market. The following sub-sections further explain these three pillars.

Figure 3: The three pillars of the Solvency II Directive



Source: Adapted from Trade Finance Global (2016).

3.2.2.1 Pillar I: Quantitative aspects

The first pillar comprises the quantitative requirements of insurance companies, which are the capital held by insurance companies specifically designed to mitigate the risks a certain company faces (Goggin & Chisholm, 2008). The risk-based capital framework is one in which insurance companies maintain adequate capital to mitigate all potential hazards a company may encounter (European Commission, 2014). This fosters a more comprehensive awareness of business risks among insurance companies. Capital requirements encompass operational, credit, market, and underwriting risks instead of liquidity. Companies' available capital is determined by the excess of assets over liabilities. Additionally, this pillar mandates that assets and liabilities be valued at market value, establishing consistency in the markets (Brahin et al., 2013). Insurers must determine two distinct categories of capital requirements: SCR and MCR. SCR is the economic capital of insurance and reinsurance undertakings that insurers must maintain to fulfill their insurance obligations to policyholders and beneficiaries with 99.5 percent certainty over the next twelve months. In contrast, the MCR is the solvency level that guarantees a company can fulfill its obligations with 85 percent certainty. The primary instrument for determining a company's solvency level is the SCR. The VaR of the insurance company is associated with the likelihood of an event occurring once every two hundred years (Ernst & Young, 2008). Insurers should maintain a solvency level at SCR according to Solvency II regulations. Supervisors may intervene if it falls to MCR, potentially transferring portfolios or constraining new businesses. Capital can be calculated using standard or internal models, ensuring better risk representation without reducing capital base (Buckham et al., 2010).

3.2.2.2 Pillar II: Qualitative aspects

The second pillar outlines qualitative requirements for companies' internal capital assessment rules, focusing on risk management leadership, linking risk strategy to business strategy, and managing risk-bearing capacity. It also imposes governance structure and mandatory functions for insurance companies (Hay et al., 2011). Own Risk and Solvency Assessment, ORSA, is a requirement to fulfill Pillar II and is a vital part of a company’s qualitative assessment of its own risk. It is an internal forward-looking process to assess a company’s exposed risks, the corresponding capital requirements, and adequate capital resources. Companies must assess their solvency and financial position (Hay et al., 2011). The process helps management and the board understand a company's risks and possibilities in its current business plan. It evaluates assets and liabilities, strategic goals, risk appetite, medium-term risks, and capital planning following goals and regulatory framework.

3.2.2.3 Pillar III: Information disclosure

Pillar III focuses on increasing transparency in the insurance market through public reporting and disclosure to stakeholders and private disclosure to supervisors (Heisen et al., 2014). By enhancing market transparency, competition is spurred, thereby reducing the barriers to entry (European Commission, 2014). The obligation to provide continuous reporting on an annual and quarterly basis is contained within the third pillar (Heisen et al., 2014). The annual public report simplifies company comparisons by reflecting their risk profile, SCR and MCR calculations, and potential deviations from the standard model. Companies must report quarterly to supervisors and privately for supervisory review. The report should include business strategies, continuity plans, and a thorough explanation of internal model results. It should also address legislative and regulatory issues, future solvency needs, and risk exposure revisions (Buckham et al., 2010).

4 INSURANCE INDUSTRY IN BOSNIA AND HERZEGOVINA

The insurance industry is one of the most important catalysts for economic growth (Škrinjarić, 2016). Even though Solvency II is a European regulation, its impact is far-reaching, as EU insurance companies have subsidiaries in other markets, and insurers from other markets have subsidiaries in the EU. Many countries have the intention to adopt the directive or modify existing regulations to align with it. The regulatory agencies of other countries are acknowledged by Solvency II if they satisfy the "equivalence" principles (Wang, 2013). Given those insurance companies with a majority of foreign capital (EU countries) account for 54.38% of total premiums and 97.65% of the life insurance market in B&H in 2020 (AZOB&H, 2021), it is reasonable to consider the implications of Solvency II for insurance companies in B&H.

Solvency II has been regarded as an extremely important event in developed countries. On the other hand, developing countries like B&H are attempting to determine the most efficient method of implementing the measure based on available resources, data, and knowledge. When discussing Europe, developing countries share many similarities in structure, economic development stage, and challenges. Having said that, it is simple to see the difficulties they will face when attempting to apply the new legislation (Šain & Selimović, 2014).

In developing countries, such as B&H, the implementation possibilities of insurance directives are very important. In B&H, Solvency II has yet to be implemented. Its financial system is fragmented and decentralized. In the constitutional system of government in B&H, the insurance sector is overseen and regulated by institutions that supervise and regulate the insurance market at the level of entities. There are two supervisory institutions at the entity level: the Insurance Supervisory Agency of the Federation of B&H (NADOS) and the Insurance Supervisory Agency of the Republic of Srpska (AZORS). At the state level, the Insurance Agency of B&H (AZOBIH) does not have supervisory power. It is a matter of time before the insurance authorities in B&H must fully align and modify the existing B&H regulations to comply with the Solvency II Directive. Furthermore, they must engage in initiatives to facilitate the implementation of the Solvency II framework, which aims to establish effective oversight of insurance companies' business operations. Given the intricate nature of implementing new regulatory standards in the B&H market, regulatory and supervisory organizations, insurance firms, and professional groups in B&H must collaborate (Kozarević, et al., 2014).

In light of B&H's potential candidacy for EU membership, it is necessary to establish a legal and regulatory framework to ensure that the local financial industry complies with the EU's regulatory standards (Selimović & Mioković, 2019). In 2017, the FB&H enacted a new Insurance Law (NADOS, 2018), introducing numerous noteworthy modifications that would impact the forthcoming execution of the Solvency II procedures. These changes encompass the following: a) Increased emphasis on risk management through the implementation of Own Risk and Solvency II Assessment (ORSA); b) Imposition of more stringent capital requirements, which are now twice as high as before; c) Potential opening of the market to insurers from the European Union; d) Granting of extra supervisory powers to the NADOS, among other measures. Moreover, considering the significance of the comprehensive approach to risk management that Solvency II requires, adopting the Risk Management Rulebook is very important. The AZORS, however, developed the Strategic Preparatory Framework for the Transition to a Regulatory Framework founded on Solvency II (AZORS, 2021).

To implement the new regulatory framework Solvency II in B&H, significant modifications will need to be made to enhance openness and public disclosure in the insurance industry of B&H (Selimović & Mioković, 2019). Insurance businesses will face a significant managerial challenge due to implementing the new holistic approach to risk management (De Haan & Kakes, 2010). The EU's Solvency II project introduces a new rule that mandates qualitative and quantitative alterations to the solvency requirements for insurers. The new market rules establish a stronger connection between the capital structure and the risk profile, resulting in a reduced requirement for capital that insurance companies need to maintain solvency (Taso, 2010).

This thesis should clarify the key challenges of Solvency II regime implementation in a small developing country from the perspective of the insurance stakeholders in B&H, considering all the characteristics of the country and the complexity of Solvency II. Regulation in B&H should not be linearly the same as in the developed countries because of the different criteria applied in Europe. However, it could gradually get close to those standards, as the country’s whole economy, and raise awareness about insurance (Šain, 2019). Altrén and Lyth (2007) conducted a similar study, which suggested that insurance companies were unlikely to invest as significantly in Solvency II as banks have in Basel II. The potential opportunities and enhancements in risk management insufficiently supported the business case.

The insurance regulation in B&H should be going through some major changes regarding Solvency II specifics and the most important changes this Directive brings for domestic insurers (Kalinić, 2017). In addition to the determination to implement this Directive rather than strict rules as the solvency margin, the new regulation will require a completely different approach to holistic risk management, risk transfer, and investments of insurance companies. The issue that this thesis is addressing is the possible effect that the introduction of Solvency II may have on the insurance companies in B&H.

4.1 Supervisory Structure and Insurance Legislation

The legal framework of B&H is very complex due to the combination of different government systems: the State and two separate Entities, the Federation of Bosnia and Herzegovina (FB&H) and the Republic of Srpska (RS). Formally, Brčko District is a unique administrative unit of local government under the sovereignty of B&H.

4.1.1 Supervisory structure

Insurance Agency of Bosnia and Herzegovina (AZOBiH): The AZOBiH is founded to ensure the stability and efficiency of insurance and reinsurance companies. It functions under the guidelines stipulated in the Law on Insurance Agency of Bosnia and Herzegovina. The agency's primary responsibilities include implementing insurance laws and regulations and creating efficient cooperation between the Insurance Supervisory Agencies of FB&H and the Republic of Srpska.

Insurance Supervisory Agency of the Federation of Bosnia and Herzegovina (NADOS): The NADOS, a legally independent and non-profit authority founded under the Government of the Federation of Bosnia and Herzegovina, is the supervisory authority of the insurance industry of the Federation of Bosnia and Herzegovina. Some of the agency's insurance regulatory and supervisory activities include licensing insurers to operate the insurance business and revoking licenses of insurers and intermediaries.

Insurance Supervisory Agency of the Republic of Srpska (AZORS): The AZORS, a legally independent and non-profit authority founded under the Government of the Republic of Srpska, is the supervisory authority of the insurance industry of the Republic of Srpska. Some of the agency's insurance regulatory and supervisory activities include licensing insurers to operate the insurance business and revoking licenses of insurers and intermediaries.

4.1.2 Insurance Legislation of Bosnia and Herzegovina

The legal and regulatory framework for the insurance business in B&H is determined by laws and regulations on the state level and entity levels, enforced by the courts, and controlled by the supervisory authorities.

Insurance activity in B&H can be undertaken by insurance companies established as joint-stock companies. The minimum share capital requirement in FB&H ranges from BAM 4 million to BAM 6 million, depending on the type of risk insured, and the minimum share capital requirement in RS ranges from BAM 2 million to BAM 3 million, depending on the type of risk insured. The business of insurance is generally conducted by standard-type joint-stock companies.

Some key compulsory insurances required within the Bosnia and Herzegovina insurance industry are motor third-party liability insurance, aviation liability insurance, marine liability insurance, professional indemnity insurance, and liability insurance.

The Law on Insurance Agency of Bosnia and Herzegovina (Official Gazette of B&H, number 12/2004) regulates the insurance industry in B&H by ensuring the necessary coordination of the insurance laws in both Entities, within the Entities and in B&H, including insurance-related activities carried out in B&H in terms of creation, location, structure, status, scope of work, management, rights, obligations and financing of the AZOBIH.

The Law on Insurance (Official Gazette of FB&H, number 23/17) states that the NADOS must authorize insurers and reinsurers before insurance activities in FB&H commence. The regulator must also authorize intermediaries and register them in a special register maintained by the NADOS to mediate insurance products in the country.

The Law on Insurance Companies (Official Gazette of RS, number 17/05, 01/06, 64/06, 74/10) regulates the foundation, performance, supervision, and termination of insurance companies' insurance business and their branches in Republic Srpska. It also regulates the establishment of the AZORS.

Other areas of the insurance business are regulated on an entity level, with different laws related to private insurance, obligations, companies, finance, and accounting, among other things.

4.2 Insurance Market and Performance Indicators

3.3.2 Structure of the financial sector

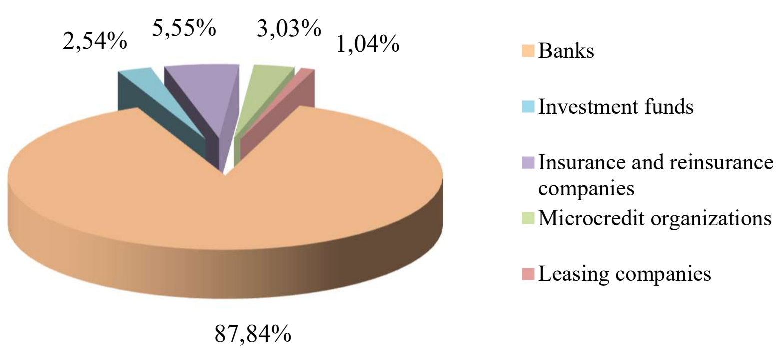
The financial services sector in B&H comprises the following financial institutions: banks, investment funds, insurance and reinsurance companies, microcredit organizations, and leasing companies. As illustrated in Table 1, the financial sector's total assets in 2022 amounted to 42.10 billion BAM. The banking sector in B&H represents the largest share, 87.84% of the total assets of the financial sector. In comparison, insurance and reinsurance companies represent 5.55% of the total assets of the financial sector, as shown in Graph 1. This confirms the bank-centric nature of the financial services sector in B&H (NADOS, 2023).

Table 1: Structure of the financial services sector in B&H, 2020 to 2022 (BAM thousands)

Financial institutions of the financial services sector in B&H	**2020**		**2021**		**2022**		**Assets growth index**	
	Assets	**Share (%)**	**Assets**	**Share (%)**	**Assets**	**Share (%)**	**21/20**	**22/21**
Banks	32,905	88.40	35,442	88.35	36,945	87.84	107.71	104.24
Investment funds	817	2.19	935	2.33	1,070	2.54	114.43	114.49
Insurance and reinsurance companies	2,070	5.56	2,196	5.47	2,335	5.55	106.10	106.33
Microcredit organizations	1,087	2.92	1,170	2.92	1,274	3.03	107.63	108.96
Leasing companies	344	0.92	374	0.93	437	1.04	108.64	116.94
Total	**37,222**	**100**	**40,116**	**100**	**42,062**	**100**	**107.76**	**104.85**

Source: NADOS (2023).

Figure 4: Shares of financial institutions in the financial sector of B&H in 2022



Source: NADOS (2023).

3.3.3 Structure of the insurance sector

In 2022, 25 insurance companies and one reinsurance company operated in the insurance sector in B&H. Two insurance companies started integrating in 2022, and the integrated insurance company started operating in January 2023.

Among the 25 insurance companies, 11 are based in the Federation of Bosnia and Herzegovina and 14 in the Republic of Srpska. Out of the total, 16 companies offer non-life insurance, 9 are composite companies, and 1 specializes in reinsurance. The insurance system is dominated by non-life companies, while life insurance is still in its developing phase.

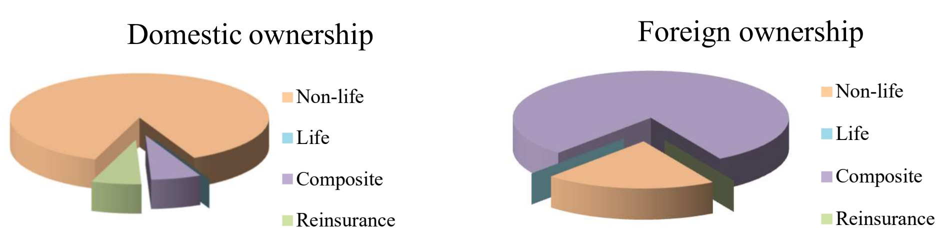
There are 1,567 registered intermediaries in the market, with 1,484 being natural persons and 83 being legal entities. Among all registered intermediaries who are natural persons, 1,462 are insurance representatives, and 22 are insurance brokers. Among the registered intermediaries, 59 are representative companies, and 24 are brokerage companies. Companies with a majority of foreign capital accounted for 54.19% of the total premium. In 2022, companies with a majority of foreign capital held a 97.96% share in the life insurance market and a 42.29% stake in the non-life insurance market (Insurance Agency of B&H, 2022). The ownership structure and types of insurance activities provided by insurance companies in B&H are displayed in Table 2 and Figure 5.

Table 2: Ownership structure and types of insurance in B&H in 2022

Ownership	**Non-life**	**Life**	**Composite**	**Reinsurance**	**Total**
Domestic	14	0	1	1	**16**
Foreign	2	0	8	0	**10**
Total	**16**	**0**	**9**	**1**	**26**

Source: NADOS &AZORS (2023).

Figure 5: Ownership structure and types of insurance in B&H in 2022



Source: NADOS & AZORS (2023).

In 2022, the insurance and reinsurance sector in B&H accounted for 5.55% of the total assets in the financial sector, amounting to BAM 42,10 billion. This percentage is notably low, given the significance of insurance firms as institutional investors.

In 2022, insurance and reinsurance companies in B&H reported an increase in total income of 8.12% compared to 2021. In the Federation of B&H, the total generated income rose by 6.90%, and in RS, it increased by 10.67% compared to 2021 (AZOBiIH, 2023).

Table 3: Total income of the insurance and reinsurance sector in B&H, 2019 to 2022 (BAM thousand)

	2019	Share (%)	2020	Share (%)	2021	Share (%)	2022	Share (%)	Index of income growth		
									20/19	21/20	22/21
B&H	**810,058**	**100**	**821,661**	**100**	**877,418**	**100**	**948,689**	**100**	**101.43**	**106.79**	**108.12**
FB&H	552,280	68.18	552,282	67.22	593,141	67.60	634,068	66.84	100.00	107.40	106.90
RS	257,778	31.82	269,379	32.78	284,277	32.40	314,621	33.16	104.50	105.53	110.67

Source: NADOS & AZORS (2023)

Insurance businesses in B&H experienced a 6.25% decline in profit compared to 2021. In the Federation of B&H, profits declined by 10.60%, and in RS, profits decreased by 1.09% compared to 2021. The combined capital of insurance and reinsurance businesses in B&H rose by 2.53% in 2022 compared to 2021. Insurance companies' capital in FB&H rose by 1.87%, whereas in RS, it increased by 3.93% during the same time (AZOBiH, 2023).

Table 4: Total profit of the insurance and reinsurance companies, 2019 to 2022 (BAM thousand)

	2019	Share (%)	2020	Share (%)	2021	Share (%)	2022	Share (%)	Index of the profit growth		
									20/19	21/20	22/21
B&H	**63,985**	**100**	**72,149**	**100**	**74,963**	**100**	**70,274**	**100**	**112.76**	**103.90**	**93.75**
FB&H	34,062	53.23	36,530	50.63	40,729	54.33	36,412	51.81	107.24	111.49	89.40
RS	29,923	46.77	35,619	49.37	34,234	45.67	33,862	48.19	119.04	96.11	98.91

Source: NADOS & AZORS (2023).

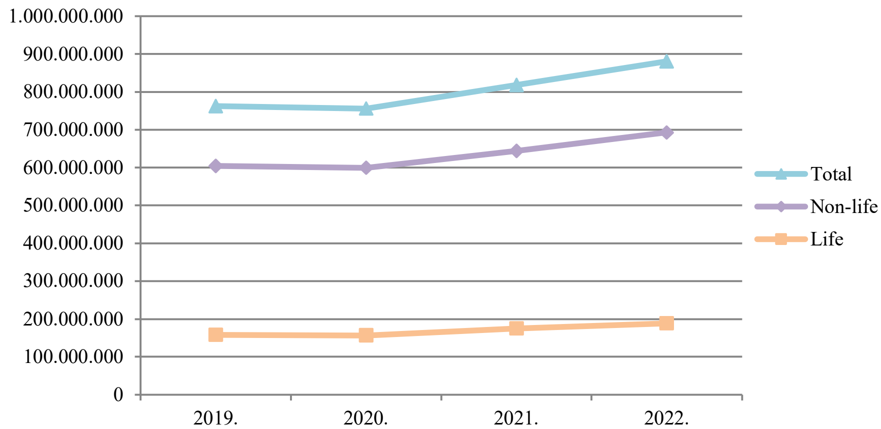
In 2022, the total premium in B&H was BAM 881,057 million, which is 7.66% higher than in 2021. Insurance services are provided throughout B&H, so 69.86% of enterprises have headquarters in FB&H, whereas 30.14% have headquarters in RS. In 2022, BAM 692.812 million (78.63%) of the realized insurance premium pertains to non-life insurance, while BAM 188.245 million (21.37%) pertains to life insurance. The non-life insurance sector reported a 7.64% gain compared to 2021, while the life insurance sector experienced a 7.70% increase from the previous year.

Table 5: Gross written premium of life and non-life insurance in B&H, 2019 to 2022 (BAM thousand)

	2019	Share (%)	2020	Share (%)	2021	Share (%)	2022	Share (%)	Premium growth index		
									20/19	21/20	22/21
Non-life	604,343	79.23	599,508	79.31	643,612	78.64	692,812	78.63	99.20	107.36	107.64
Life	158,437	20.77	156,386	20.69	174,794	21.36	188,245	21.37	98.71	111.77	107.70
Total	**762,780**	**100**	**755,894**	**100**	**818,406**	**100**	**881,057**	**100**	**99.10**	**108.27**	**107.66**

Source: NADOS & AZORS (2023).

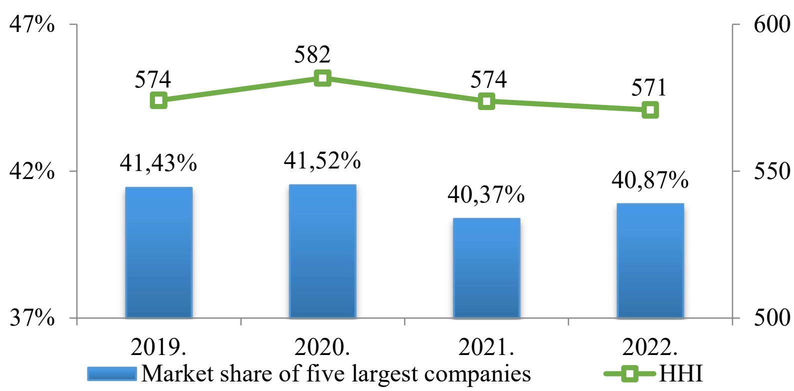
Figure 6: Trend of growth of premium in life and nonlife insurance in B&H, 2019 to 2022



Source: NADOS & AZORS (2023).

According to Herfindahl Hirschman's market concentration index, the competition level in the life insurance market in Bosnia and Herzegovina was moderate in 2022. The non-life insurance industry and the entire insurance market (comprising life and non-life insurance) had significant competition, similar to prior years. The insurance market of Bosnia and Herzegovina is characterized as non-concentrated based on the Herfindahl Hirschman (HHI) index, indicating a significant number of insurance providers with similar market share (AZOBIH, 2023).

Figure 7: HHI for life and nonlife insurance in B&H, 2019 to 2022



Source: NADOS & AZORS (2023).

4.3 Harmonization with the Solvency II Directive

According to the Stabilization and Association Agreement between the EU and B&H (Directorate for European Integration, n.d.), which represents an international obligation of Bosnia and Herzegovina, the country has undertaken the obligation to harmonize its legislation according to EU criteria. On the path towards full membership of B&H in the EU, it must, like other candidate countries, align its entire legislation with that of the EU, as other candidates did as well.

Despite the lack of progress in preparing for the transition to a Solvency II-based regulatory framework (European Commission, 2022), some changes have been made in terms of the insurance regulatory framework of B&H. From the regulatory standpoint, the activities are focused on preparing a road map and drafting a Strategy for Implementation of Solvency II, along with targeted harmonization efforts between two supervisory agencies. The process will involve analyzing insurance companies' compliance with legislation regulating insurance activities. It will also include conducting a quantitative impact study, which Pillar I requires, to assess insurance companies' capital adequacy and technical reserves and the entire insurance sector.

In the Federation of Bosnia and Herzegovina, after the entry into force of the Insurance Law (in effect since 2017), within a defined five-year period, insurance companies have increased the minimum capital for non-life insurance from BAM 5.0 million to BAM 10.0 million, for life insurance from BAM 3.0 million to BAM 6.0 million, for reinsurance from BAM 3.0 million to BAM 6.0 million. In this way, they are aligned with the minimum capital threshold defined by the Solvency II Directive for the EU member countries.

The new Insurance Law signifies an intermediate stage in the process of transitioning gradually from the Solvency I regime to Solvency II. The primary emphasis is increasing capital and managing the insurance organization's risks. Insurers commit to implementing their internal documents for identifying and controlling risks. There is a significant need to utilize current information technology to record all procedures and business changes, to follow the established procedures, and to guarantee database security. Internal controls, monitoring, and timely notice of warning signals are crucial in preventing operational issues that may result in the insurance firm facing illiquidity and insolvency (NADOS, 2023).

The Insurance Supervisory Agency of the Federation of Bosnia and Herzegovina conducted a survey to assess the understanding of the Solvency II concept and the development level of functions in the Solvency II management system. The survey involved providing insurance companies in the Federation of Bosnia and Herzegovina with the "Questionnaire – Qualitative Impact Study 'Solvency II'." The research aimed to help insurance businesses evaluate their current status and progress by using a specific questionnaire. Also, to help them anticipate future regulatory demands and strategies for enhancing important internal operations. The research aimed to collect data on the comprehension of the significance and extent of advancement of the functions of the management system in alignment with Solvency II standards. The research results will serve as a foundation for recognizing the need to enhance knowledge within the insurance industry and guide future regulatory efforts (NADOS, 2023).

In the previous period, within its capacities, the AZORS conducted activities that were identified as a priority in the originally issued strategic framework to conduct the following: 1) analysis of the possibility of excluding small insurance companies from the application of Solvency II; 2) gap analysis of the capacity of the insurance companies to implement the qualitative requirements of Solvency II; 3) stress-test of the insurance companies and the insurance sector of the Republic of Srpska (AZORS, 2023).

The analysis results indicate that under present circumstances, all insurance businesses must adhere to the Solvency II criteria. The primary explanation for these results is that insurance businesses with lower estimated premiums primarily focus on liability insurance and thus must adhere to Solvency II regulations. The exemption from applying proportionality rules should not be confused with smaller companies. Proportionality does not entail reducing legal requirements for smaller companies but rather involves easing reporting requirements and potentially combining certain key functions.

Assessing the preparedness and capabilities of insurance businesses to meet the fundamental qualitative standards of the second pillar of Solvency II is the initial step towards aligning with the comprehensive criteria of Solvency II. The Agency conducted a survey to assess the understanding of Solvency II and the development level of the management system related to Solvency II among insurance companies. The survey questionnaire was titled "Determination of the level of development of management system functions against Solvency II requirements." The research aimed for insurance companies to assess their current position and development level by comparing with the questionnaire, while also considering future regulatory requirements and strategies for enhancing key internal functions. This research provides the foundation for identifying requirements in the insurance business and guiding future regulatory actions. The survey results show that there is some understanding of the qualitative requirements of Solvency II. However, there is a lack of information regarding the ORSA procedure. The exemption applies to companies operating within insurance-focused organizations, demonstrating a particular level of awareness of the ORSA procedure through their responses (AZORS, 2023).

In late 2021, the first stress test was carried out on insurance companies and the sector as a whole. The stress test involved three distinct and extreme scenarios: a decrease in the value of specific asset categories, losses from default by reinsurers, and increased mortality due to a pandemic, leading to insufficient reserves for claims. The stress test was created per approved supervisory practices and by appropriately adapting the EIOPA stress test methodology. The stress test was conducted to evaluate the susceptibility of insurance companies and the sector to unfavorable market conditions that could impact financial stability. It aimed to analyze how events could affect insurance companies' capital adequacy and operations, as well as their preparedness and response to such events. Another goal was to increase knowledge among insurance businesses about the actual market dangers that could jeopardize their financial stability. The stress test results show that the insurance sector's financial viability would not be at risk from individual unfavorable scenarios if they were based on realistic assumptions. However, companies would respond differently if any extreme scenarios were to occur. The stress test found that the regulatory framework and supervisory processes are not responsive to external and internal risks (AZORS, 2023).

Training staff to adopt the qualitative criteria of Solvency II and increase awareness among insurance businesses is crucial. Educational sessions should be organized to emphasize the significance and benefits of preparing in advance for future regulatory requirements under Solvency II.

4.4 Potential implications of the Solvency II Directive

Any discussion about the potential implications of the Solvency II Directive on the insurance market of B&H involves some uncertainty. There are two main reasons for such uncertainty:

1. Compared to the developed European countries, the B&H economy and its insurance sector are underdeveloped and significantly below the average of EU member countries to GDP, realized premium, the share of total premium in GDP, GDP per capita, and the amount of premium per capita. Although B&H has its unique economic area, the lack of harmonization of the regulatory framework between the two state entities poses a challenge for market participants and institutions. Unlike the EU, in B&H, except for individual scientific and research projects, no quantitative study of the implementation of Quantitative Impact Studies (QIS) of the Solvency II to insurance companies has been conducted, nor has a strategy or plan for the transition to the Solvency II regime been adopted at the level of B&H insofar (NADOS, 2023).

2. It is difficult to talk about the impact of the Solvency II Directive when this regulation is not legally and formally in force in B&H. Therefore, it is necessary to start drafting and adopting new legislation that will contain a mandatory analysis and assessment of all risks and the necessary solvent and minimum capital and reserves for their coverage, as well as additional requirements concerning the processes of supervision and control and greater transparency of data on business results, solvency, value of insurers, etc.

Some potential benefits of the Solvency II Directive implementation in B&H would be the following (AZOBIH, 2023):

- ensuring full competitiveness in the insurance market,
- better connection between capital structure and risk profile,
- transparency of insurance companies' activities and compliance with regulatory requirements,
- consumer protection,
- profitability of insurance companies,
- easier supervision and assessment of insurance companies' financial stability, etc.

Some challenges of applying Solvency II to insurance companies in B&H are the following (AZOBIH, 2023):

- time for implementation,
- significant funds,
- the necessity of updating risk management and financial management,
- application of new knowledge,
- methodologies, data, and calculations,
- need for improving the data structure, data storage, and available information systems and technology,
- training for the insurers, transfer of risk to the insuree, etc.

Implementing Solvency II may impact regulatory processes in B&H so that regulating the insurance field will be based on risk and capital requirements, along with risk-based supervision that will require intensive communication between the insurers and the supervisory authorities (AZOBIH, 2023). Some of the obstacles in this process are the following:

- The organizational and financial fragmentation of local insurers means that many small insurers will have difficulty meeting the basic capital requirements under the new Solvency II regime without the consolidation and merger of internal business potentials.
- To achieve full functionality, raising the level of internal and external controls and supervision of insurers' operations will be necessary. This will also comply with Pillar 3 of Solvency II by increasing the availability of relevant information on insurers' operations, especially on their related entities.
- The fragmentation of the overall market in B&H, including the division of the domestic insurance market among the state entities, is also a possible obstacle to the unified concept for and implementation of the new regime in B&H.
- B&H's legal and legislative organization to state entities is closely related to the market organization, which may make it difficult to adopt and apply a new solvency regime in B&H.
- Possible aggravating circumstances in defining, and especially in practical implementation of the new solvency regime in our country are insufficient measures in terms of organized mass-level training of the domestic insurance sector employees

regarding the Solvency II project. In particular, the limited number of licensed insurance actuaries so far (30 of them), the slow inflow of new ones, and the absence of locally organized training for them.
- Possible limitations also relate to inadequate information (database) and software support in the management of insurance and reinsurance operations and in the process of applying the model for quantification of capital requirements that the insurance company must meet to cover the underlying risks under the new solvency regime. (NADOS, 2023).

5 RESEARCH METHODOLOGY AND DESIGN

5.1 Research objectives

The main research objective of this thesis is to identify the benefits and challenges of Solvency II implementation in Bosnia and Herzegovina from stakeholders' perspectives. Considering the complexity of Solvency II Directive requirements applied in EU-developed countries, on the one hand, and all the difficulties of B&H, as a developing country and its insurance industry, on the other, this thesis will help us understand all the challenges that insurance stakeholders in B&H are facing regarding Solvency II Directive implementation.

This thesis will explore the regulatory and supervisory framework of the insurance industry in the EU and propose recommendations for implementation in B&H. The objectives of this master's thesis are the following:

- Present the insurance regulation and supervision development in the EU and the current state of the insurance regulation and supervision in B&H;
- Understand the implications of the Solvency II Directive to the insurance companies in B&H;
- Identify the benefits and challenges faced by the insurance stakeholders when it comes to the implementation of the Solvency II Directive;
- Provide recommendations for the insurance industry in B&H based on the perspectives of insurance stakeholders in B&H obtained through the interviews.

5.2 Research methodology and design

To understand and summarize the research topic, a literature review was prepared to include the work written up to date on the research topic. It provided an understanding of the EU regulatory and supervisory developments in the insurance industry and their reflection on the insurance industry in B&H.

The next step was to use qualitative research based on data collected through semi-structured interviews with the insurance stakeholders in B&H. In total, 14 stakeholders participated in the interviews: three (3) supervisory and regulatory authorities, one (1) actuarial association, and ten (10) insurance companies, including one (1) reinsurance company.

The semi-structured interview employed open-ended questions. There were two sets of interview questions, each set including five questions. The first set of questions was intended for the regulatory and supervisory authorities in B&H (Appendix 2), and the second set of questions was intended for the insurance companies, a reinsurance company, and an actuarial association of B&H (Appendix 3).

The interviews were conducted with relevant decision-making individuals and experts from the regulatory and supervisory authorities and the insurance companies in B&H. Questions were structured to make respondents answer about the current situation in the insurance industry, both from the side of the insurance companies and regulatory authorities. Questions were related to obstacles and issues of Solvency II implementation in B&H, including the cost of implementing and complying with the new solvency assessment and management regime, the appropriateness of the Solvency and Assessment and Management Framework (SAM) regime for insurers, and the sustainability of small and medium short-term insurers in B&H.

In analyzing responses, it was assumed that the insurance companies' responsible persons answered the questions honestly and objectively.

After the interviews were completed, answers were collected and analyzed. Based on the perspectives of insurance stakeholders received through the interviews, recommendations will be provided for the insurance industry in B&H. This will be useful for those who seek best practices and approaches in the country's insurance regulation and supervision.

5.3 Primary data collection

Primary data focusing on qualitative data were gathered through semi-structured interviews to understand the insurance market from the stakeholders' perspective (Appendix 3 and 4). This research method was selected as the most suitable to examine the opinions of senior managers of insurance/reinsurance companies, regulatory authorities, and actuary association in B&H related to the subject matter of the insurance market in B&H.

The main interview questions focused on key challenges of the insurance market, including regulatory and supervisory challenges and plans to comply with the Solvency II Directive. Also, on the side of insurance companies, the focus was on the potential impact of the Solvency II regulation on their risk management and whether potential changes would result in opportunities or burdens in their business.

The primary data collection took place between January and March 2023. All interviews were conducted in the local language.

5.4 Sample description

For primary data, the sample was selected based on interviewees' market participation for insurance/reinsurance companies in B&H and the professional competency of individuals in charge of managing the regulatory and supervisory authorities in B&H as the most useful for the study. The research included 14 stakeholders, of which three (3) representatives of supervisory and regulatory authorities, one (1) representative of an actuarial association, and ten (10) representatives of insurance companies, including one (1) reinsurance company. The selected sample was heterogeneous, considering the market field in which interviewees participate. Therefore, the research provides an overview of the insurance market in B&H from different stakeholders' perspectives. The interviewees are well-respected and distinguished individuals, directors of the regulatory and supervisory authorities in B&H, chairman of the actuarial association, and CEOs of the insurance companies (Appendix 5), which ensures a diverse sample.

6 FINDINGS AND RESULTS

The following questions and answers refer to B&H's supervisory and regulatory authorities in B&H: the Insurance Agency of Bosnia and Herzegovina, the Insurance Agency of Federation of B&H, and the Insurance Agency of Republic Srpska.

Q1 – What are the key challenges of the insurance market regarding the regulatory and supervisory framework in the Federation of Bosnia and Herzegovina / the Republic of Srpska / Bosnia and Herzegovina?

Regarding key challenges facing the insurance market, regulatory and supervisory authorities perceive a need to harmonize entity-level insurance regulations with each other and EU legislation. According to the respondents, although B&H has its unique economic area, the lack of harmonization of the regulatory framework between the two state entities still poses a challenge for market participants and institutions.

As pointed out by the respondents, the major challenge faced by all insurance market players in B&H is the economy (thus also being the case with other countries in the region) that is underdeveloped and significantly lags behind the average of EU member countries concerning GDP, realized premium, share of total premium in GDP, GDP per capita, and the amount of premium per capita.

“Unlike the EU, in B&H, except for individual scientific and research projects, no quantitative study of the implementation (QIS) of the Solvency II to insurance companies has been conducted, nor has a strategy or plan for the transition to the Solvency II regime been adopted at the level of Bosnia and Herzegovina insofar. The assumption is that the implementation of Solvency II in B&H will lead to an increase in the required capital, a decrease in available own capital, an increase in market risk as a result of the risk of concentration of investments due to an underdeveloped capital, and money markets and, on this basis, of the capital requirement, as well as an increase in the risk of non-payment by counterparties” (Director of the Insurance Agency of FB&H).

Q2 - Are there any plans to comply with the Solvency II Directive? If yes, please specify areas for further regulatory improvements and elaborate on what actions must be taken to comply with the Solvency II regulations.

Respondents to the questionnaire agree that starting the steps and timelines to harmonize legislation in Bosnia and Herzegovina with the Solvency II Directive would be necessary. This new legislation should contain a mandatory analysis and assessment of all risks and the necessary solvent and minimum capital and reserves for their coverage, as well as additional requirements concerning the processes of supervision and control and greater transparency of data on business results, solvency, and value of insurers. As pointed out in the responses, the EU Solvency II project's theoretical knowledge, experiences, models, and guidelines are being utilized to develop a new solvency regime in B&H insurance market. The B&H Insurance Agency is responsible for proposing laws and amending existing ones, granting consent to draft versions, and submitting them to entity-level ministries for EU legislation implementation. They are planning steps to harmonize legislation with the Solvency II Directive and cooperating with insurance institutions in Bosnia and Herzegovina.

“The harmonization dynamics are determined by the official proposing party of the law, i.e. the Ministry of Finance of the Republic Srpska. According to our information, there is a regulatory commitment towards gradual harmonization with Solvency II. The Agency will take all activities within the scope of its competence regarding this preparation” (Director of the Insurance Agency of RS).

Q3 - What are the possible benefits and challenges of Solvency II implementation for insurance companies in the Federation of Bosnia and Herzegovina / the Republic of Srpska / Bosnia and Herzegovina?

The respondents' opinion about this question is that once implemented, Solvency II would have certain benefits for the insurance companies in the Federation of B&H and in the Republic of Srpska (Bosnia and Herzegovina). They would be the following: ensuring full competitiveness in the insurance market, transparency of insurance companies' activities and compliance with regulatory requirements, consumer protection, profitability of insurance companies, easier supervision, and assessment of financial stability of insurance companies.

Some challenges of applying Solvency II to insurance companies in the Federation of B&H and in the Republic Srpska (Bosnia and Herzegovina) would be the following: time for implementation, significant funds, the necessity of updating risk data management and financial management, application of new knowledge, methodologies, data, and calculations, need for improving the data structure, data storages and available information systems and technology, training for the insurers, transfer of risk to the insuree, etc. Also, raising awareness about one's own exposure to risks.

The main reasons for introducing the Solvency II project in the EU are the development of the single market and the expansion of the EU, improving the competitiveness of the insurance market, greater protection of insurees, a better connection between the capital structure and the risk profile, and others.

As respondents emphasized, the fragmentation of the B&H market, including the domestic insurance market, may hinder the implementation of a new solvency regime. The legal and legislative organization of B&H's state entities may also make adopting and applying the new regime difficult. Insufficient mass-level training for domestic insurance sector employees, limited licensed insurance actuaries, and inadequate information and software support also pose challenges. The insurance market in the Federation of B&H comprises 7 companies, 11 of which are EU-linked, and they already use Solvency II as a group standard, despite local regulations not requiring it.

“Many small insurers will have difficulty meeting the basic capital requirements under the new Solvency II regime without the consolidation and merger of internal business potentials. To achieve full functionality, it will be necessary to raise the level of internal and external controls and supervision of the insurers’ operations, as well as to comply with Pillar 3 of Solvency II by increasing the availability of relevant information on the operations of insurers, especially on their related entities” (Director of the Insurance Agency of F&B).

Q4 - How would the Solvency II implementation affect the regulatory and supervisory processes in the Federation of Bosnia and Herzegovina / the Republic of Srpska / Bosnia and Herzegovina?

Respondents noted that implementation of Solvency II may affect regulatory and supervisory processes in the Federation of B&H and in the Republic Srpska (Bosnia and Herzegovina) in such a way that regulating the insurance field will be based on risk and capital requirements. It will be risk-based supervision that will require intensive communication between the insurers and the supervisory authority. Also, it will make a change of the supervision focus from rule-based supervision to risk-based supervision.

As indicated by some respondents, researches show that implementation of Solvency II in B&H would lead to an increase in the required capital, a decrease in available own capital (due to non-recognition of prepayments and accrued income, valuation of (in)tangible assets, etc.), an increase in market risk as a result of the risk of concentration of investments due to an underdeveloped capital and money markets and thus of the capital requirement, as well as an increase in the risk of non-payment by counterparties. Solvency II significantly reduces this risk thanks to the prescribed uniform rules for measuring all risks, i.e., determining the amount of solvent and minimum capital required. The proposed method for insurance companies calculates reserves, solvent capital, and minimum capital based on five risk factors, with strict supervision and transparency. This approach could improve the correlation between capital structure and risk profile, reduce capital requirements for solvency, increase insuree protection, and improve market competition.

"According to the EU Directive for the Solvency II project, this approach would achieve better correlation between capital structure and risk profile that could result in reduced capital required from the insurance companies to maintain solvency based on the principle that with a higher quality of risk management leads to fewer capital requirement for the insurance company. It would also reduce the risk of insolvency of insurance companies, increase the degree of protection of insurees, and improve fair market competition" (Director of the Insurance Agency of FB&H).

Q5 - Please elaborate on the most important measures to be taken by your institution in terms of resources when it comes to the Solvency II implementation strategy.

As the most important measures to be taken, the Insurance Agencies responded that they would try both, with their capacities and by applying for various projects, to work on defining preparatory activities of insurance institutions in Bosnia and Herzegovina regarding the transposition of the Solvency II Directive into the legislation of Bosnia and Herzegovina, based on the experience of the European Union countries. They find it important to raise the employees' knowledge level and develop supervisory methodologies.

Respondents anticipate that the new Insurance Law would aim to transition from the Solvency I regime to Solvency II, focusing on increasing capital and managing risks. In their opinion, insurers must enact internal documents to identify and manage risks, requiring modern information technology for documentation and database security. Internal controls, monitoring, and timely recognition of warning signals are crucial. The Insurance Supervisory Agency of the FB&H pointed out that they conducted a survey that included twelve insurance companies to assess their understanding of the Solvency II concept and the development level of functions. The survey found that companies lack resources and a Solvency II implementation plan. However, foreign insurance companies have received high support for reporting sets and training. Many expect positive effects of Solvency II, including better risk management, increased transparency, and better regulatory reporting. However, compliance with legal requirements is hindered by a lack of methodologies, guidelines, HR resources, and training.

“Many insurance companies expect positive effects of Solvency II for identification and quantification of risks (i.e. a better risk management system) and consideration of their own capital needs, increased transparency, and regulatory reporting that better reflects business performance” (Director of the Insurance Agency of the FB&H).

The following questions and answers refer to the insurance/reinsurance companies located in the Federation of B&H and Republic Srpska, and the actuarial association of B&H.

Q1 - What are the main challenges the insurance companies in FB&H/RS currently face? Please elaborate on the top 3 key risks faced by your insurance company!

Insurance companies in B&H face various risk groups, including market risk, primary insurance risks, and secondary risks. Market risk, dominated by interest rate risk, has a positive trend towards the end of 2023. Primary insurance risks include canceling life insurance policies, while secondary risks include operational risks, inflation, IT, and geopolitical risks.

Most of the respondents mentioned unfair competition, the legal framework, and the inflation environment as key risks they face in the market.

High competitiveness between insurance companies of B&H means having the highest number of insurance companies in the region and beyond, either by population criterion or total premium, which leads to a significant decrease in premium rates.

Higher inflation represents a challenge for the insurance companies in B&H due to the increase in labor costs (services, health institutions), the price of spare parts (e.g., automobile casco insurance), construction materials, and energy products, which increases the number of damages.

Insufficient quality risk-taking or taking risks for which there is no sufficient knowledge. Neglecting the importance of taking risks in insurance leads to the acceptance of bad risks for which an inadequate insurance price is charged, ultimately leading to the payment of damages that could have been avoided or for which an appropriate premium should have been charged.

“Lack of understanding of insurance activities by the authorities at all levels and insufficient financial literacy of retail and corporate customers” (BosnaReosiguranje d.d. Sarajevo).

“Instability of the financial market, feigned damages, price list restriction (tariffs)” (SAS-SuperP osiguranje Bijeljina).

“Inflation risk, risk of interest rate change, risk of IT system protection” (Wiener osiguranje Vienna Insurance Group a.d.).

“The major challenges are the following: uneven legal regulations, unfair competition, insufficient respect for the insurance profession, inadequate supervision, insufficiently developed insurance awareness among the population, legal entities, and public companies and institutions. The major risks we face are credit, market, and insurance risks” (Triglav osiguranje d.d.).

“Investment problems, weak returns, unfair competition, non-alignment of regulations at the level of B&H, population ageing, liberalization of car liability insurance” (Adriatic osiguranje d.d.).

“Inflation, lack of workforce, undeveloped market” (Premium osiguranje a.d. Banja Luka).

“Inflation and its impact on the increase in benefits due to insured cases and the need to adjust insurance premiums. The upcoming liberalization of the car liability insurance market and the danger of undesirable effects of inflation on the market. Implementation of the new Solvency II and IFRS 17 regulations” (Sarajevo osiguranje d.d.).

“Unfair competition - small market, too many insurance companies in the market; non-alignment of regulations at the level of B&H; Liberalization of car liability insurance; Problem with investing, poor level of return on invested funds” (the Actuarial Association of B&H).

Q2 - Please explain how Solvency II regulations would affect the risk management of the FB&H/RS insurance companies and whether potential changes would result in opportunities or burdens for the insurance companies.

According to the respondents, the Solvency II regulation would affect their risk management with additional burdens since they will have to increase capital. However, it will also bring certain opportunities, such as better and more comprehensive risk management, better capital management, and greater transparency. Additional burdens include higher levels of knowledge, higher costs, and more complex monitoring and reporting. Solvency II also involves implementing the ORSA process as a strategic risk and capital management tool, influencing strategic planning, and organizing the risk management system.

Solvency II regulation aims to improve risk management by requiring companies to have a risk catalog and elaborate on risks. This will lead to better risk knowledge, recognition, and management, increasing profitability and business security. However, the changes will increase administration costs, potentially leading to market consolidation. Despite the high costs, the long-term benefits include strengthened companies, better risk management, financial stability, and security.

The company's operations in the FB&H/RS face challenges due to the absence of legal regulation. However, they calculate risks using Solvency II standards, which would require increased capital. The Solvency II regime would also introduce the IFRS 17/9 standard, affecting reserve calculations. The impact of these changes is uncertain.

“The impact of Solvency II implementation on risk management is significant. Implementing this regulation also brings some opportunities: (better and more comprehensive) risk management, better capital management, and greater transparency. However, there are additional burdens (higher level of knowledge, higher costs, more complex monitoring, and reporting)” (Triglav osiguranje d.d. Sarajevo).

“The new solvency rules should encourage insurers to hedge against all types of risks, encourage more active diversification of investments and insurance portfolios, and eliminate risk. Also, Solvency II relies heavily on market developments and modern changes. Solvency II will be a major step forward for insurance companies, bringing the insurance sector closer to banks and other financial institutions” (Adriatic osiguranje d.d. Sarajevo).

“We expect that there will be changes, but not in the form that can significantly affect the company's operations” (Premium osiguranje a.d. Banja Luka).

“The Solvency II regulatory regime implies a new approach to determining capital requirements that includes more risk in calculating capital requirements, as opposed to the previous approach in which the solvency margin calculation was based on data on premiums and damages” (Sarajevo osiguranje d.d.).

Q3 - Please elaborate on the obstacles and issues of Solvency II implementation in B&H including the cost of implementing and complying with the new solvency assessment and management regime.

Insurance companies believe that Solvency II implementation in B&H will represent additional costs, reducing the profit they generate. This will be a significant financial, IT, and personnel burden for smaller insurance companies, which could lead to the consolidation of insurance companies in the market. The diversity of insurance legislation will also not contribute to easy implementation but will be an aggravating circumstance, especially for companies working in both B&H entities.

Solvency II aims to enhance insurance sector security but may make it uncompetitive, especially for smaller companies. Companies must have a risk catalog containing all possible risks, including IT security, hacker attacks, and major disasters. Collecting all necessary documents related to Solvency II, laws, and insurance practices would be a significant task.

Insurance companies face numerous obstacles, including IT upgrades, employee and management training, corporate culture adjustments, data security, and accepting and understanding changes. These challenges are not limited to new regulations but also include the need for reorganization, greater data security, and difficulty accepting and understanding changes among all stakeholders.

“Legal frameworks, regulations not adopted, problem in finding personnel with relevant previous knowledge of Solvency II, costs, IT solutions, capital needs, possibilities of dispersion of investments” (Grawe osiguranje d.d. Sarajevo).

“We have not yet started applying Solvency II but considering that our activities are limited only to mandatory car liability insurance, a small number of shareholders, and a well-dispersed security, we do not expect any significant differences in future operations” (SAS-SuperP osiguranje Bijeljina).

“Implementing the risk management system affects the increase in the insurance company's costs” (Wiener osiguranje Vienna Insurance Group a.d.).

“We presume that the biggest challenges for companies refer to significantly higher costs (highly professional staff, IT solutions, etc.). Our company is already aligned with Solvency II” (Triglav osiguranje d.d. Sarajevo).

“The biggest issue relates to the necessary costs and personnel issues related to the implementation of additional requirements defined by Solvency II” (Premium osiguranje a.d. Banja Luka).

“The market is still not sufficiently developed for the full application of Solvency. A complex regulatory framework, insurance regulations at the entity level. Focus on car liability insurance and neglect of other types of insurance” (Sarajevo osiguranje d.d.).

“The market is still not sufficiently developed for the full application of Solvency. There is a complex regulatory framework and insurance regulations at the entity level. The focus is on car liability insurance and neglect of other types of insurance” (Euroherc osiguranje d.d. Sarajevo).

Q4 - Please elaborate on the appropriateness of the Solvency and Assessment and Management (SAM) Framework for insurers, and the sustainability of small and medium short-term insurers in Bosnia and Herzegovina.

The respondents believe that SAM is a complicated but good tool that helps manage an insurance company. It sets clear goals, strategies, roles, and responsibilities, along with improving control and requiring transparent financial reporting to both supervisory authority and the public, which is now often not the case. However, in a situation where there is not enough professional staff at the level of risk-taking and the level of middle management, especially with management boards, it will not be easy to find external members who understand insurance, and the situation is similar now in terms of supervisory board members who have essentially the same role.

“Depending on whether the company is liquid and solvent under Solvency II, and if not, the new regulation will be difficult to bear” (Grawe osiguranje d.d. Sarajevo).

“SAM does not represent an advantage for small and medium-sized insurers considering the implementation costs and market characteristics” (Wiener osiguranje Vienna Insurance Group a.d.).

“It is acceptable for our Company” (Triglav osiguranje d.d. Sarajevo).

“We expect there will be some changes, but they will not significantly impact on the business performance of our company. Small and medium-sized companies must adjust to the new market conditions” (Premium osiguranje a.d. Banja Luka).

“It is necessary to establish an adequate framework for risk management. It should be adapted to the specifics of the operations, the nature of its risks, and the complexity of its operations. Particular attention must be paid to the abilities of key managers in the company. They must meet the requirements (fit and proper criteria) for decision-making in the new organizational environment. SAM must be implemented through all three pillars of Solvency II. We believe the company should not have major problems with its implementation, but consulting with experts with experience in implementing Solvency II is necessary” (Sarajevo osiguranje d.d.).

“SAM is a framework that is used through three pillars to measure financial stability and the ability of a company to meet future obligations to clients. SAM is a very useful framework for insurance companies because it provides clear guidance on managing risks and ensuring financial stability” (the Actuarial Association of B&H).

Q5—How do you see the Solvency II framework as part of your company’s decision-making process and the use of the internal Solvency II models in dealing with the insurer’s overall risk?

The respondents' attitude is that the Solvency II regulation emphasizes the importance of risk management in decision-making, especially in the face of climate change and virus crises. Its implementation is driven by market opportunities and changes, making risk management crucial for business processes and operations. Companies consider risk management assessments in decision-making at all levels, and insurance companies are now involved in the ORSA report for the first time in 2023.

According to the responses received, the insurance companies are preparing for the moment when Solvency II will be accepted as a standard in B&H and are developing their internal models, even though it is still not a legal requirement. Solvency II fits into their decision-making process and is integral to their strategic plans. As indicated, Solvency II encourages insurers and reinsurers to develop internal risk assessment models, with large companies likely to develop these, while medium and smaller insurers can use a standard formula. On the other side, insurance companies, not members of foreign subsidiaries in our country, consider paying for expert consultancy support separately for implementing a new regulatory framework, with the initial stages using a standard formula and adapting decision-making processes to the new framework's requirements.

According to the Actuarial Association of B&H, internal models offer improved risk management and flexibility compared to Solvency II but require extensive data and professional staff. In their opinion, large companies can develop models, while small companies may use standard formulas. Investments are necessary for development and testing.

“Very positively” (Grawe osiguranje d.d. Sarajevo).

“We have not yet started applying Solvency II but considering that our activities are limited only to mandatory car liability insurance, a small number of shareholders, and a well-dispersed security, we do not expect any significant differences in future operations” (SAS-SuperP osiguranje Bijeljina).

“As a part of the European group, we are required to apply the basic clauses of Solvency II” (Wiener osiguranje Vienna Insurance Group a.d.).

“Solvency II fits into the decision-making process in the Company, i.e. it is an integral part of the Company's strategic plans. The company has a risk management system in place. In terms of calculation, it uses a standard formula (does not use an internal model)” (Triglav osiguranje d.d. Sarajevo).

“Changes in risk management will happen. There is no doubt about that” (Premijum osiguranje a.d. Banja Luka).

7 DISCUSSION AND RECOMMENDATIONS

The Solvency II Directive requires insurance and reinsurance companies to adopt a comprehensive risk management approach, align their capital structure with their risk profile, enhance company transparency, and have more flexibility in their business operations. Solvency II's fundamental premise is clearly demonstrated in its approach to comprehensive risk management. This implies that the risk culture should be integrated throughout the entire company's hierarchy, and those capable of addressing this problem will gain a competitive advantage. Financial institutions must establish a defensive mechanism to determine the necessary capital volume to meet payment obligations promptly (liquidity principle) and maintain a consistent ability to make payments (solvency principle). The minimum required capital is set by law based on the characteristics of individual markets. Insurance businesses must maintain sufficient capital in proportion to the risks they assume, contingent upon aligning their business strategy with their risk profile.

B&H is currently not required to comply with the European Solvency II rule. The Solvency II Directive affects the insurance market of B&H through the subsidiaries of EU insurance companies operating there. The constitutional system of government in B&H regulates the insurance sector through institutions that supervise and regulate the insurance market at the entity level. However, B&H is a single economic area and should have unified laws and regulations in line with the Solvency II Directive. They must carry out actions to prepare for implementing the Solvency II concept to establish effective control over insurance companies' business activities. Cooperation among regulatory and supervisory institutions, insurance companies, and professional groups in BiH is essential due to the intricate and difficult nature of implementing new regulatory standards in the market. In today's economic world, advanced insurance companies have recognized the crucial importance of capital sufficiency as a fundamental factor in all solvency models. In the future, the BiH insurance sector may adopt the remedies proposed by Solvency II. The new requirements require insurance companies to create internal models to enhance their position as top insurance businesses in financial markets. However, the issue arises with financially unstable companies that continue to employ the traditional formula. We will witness enhanced internal risk management models aligned with established principles.

This master thesis aims to identify the benefits and challenges of Solvency II implementation from the perspectives of insurance stakeholders in B&H. This part is identified under the previous chapter. The research questions examined in this master's thesis and through the interviews are current regulatory and supervisory trends and developments in B&H regarding the insurance industry, as well as the perception of insurance stakeholders regarding the impact of Solvency II implementation on the insurance industry in B&H. Finally, the aim is to provide recommendations for the insurance industry in B&H based on the perspective of insurance stakeholders in B&H received through the interviews conducted.

After analyzing the answers from all stakeholders in the research, the following recommendations are provided below:

- Since the regulatory framework's lack of harmonization is creating an unnecessary obstacle and restricting the development of insurance market participants and institutions, additional effort should be made to harmonize laws and regulations in two state entities that create one economic area of B&H.
- New legislation should anticipate necessary steps to move closer to the implementation of Solvency II and mandatory preparation of the B&H Strategy for the Solvency II implementation with necessary activities and deadlines to be followed by all parties in concern. Not all insurance companies are prepared for new challenges brought by new requirements in business activities, but this would rather stir some new developments in the market to get closer to being prepared for the new rules. This new legislation should contain a mandatory analysis and assessment of all risks and the necessary solvent and minimum capital and reserves for their coverage, as well as additional requirements concerning the processes of supervision and control and greater transparency of data on business results, solvency, and value of insurers.
- The Insurance Agency of B&H should develop continuous training programs for regulatory and supervisory agencies and insurance companies.
- The new solvency rules should encourage insurers to hedge against all risks, diversify investments and insurance portfolios more, and eliminate risk. Solvency II relies heavily on market developments and modern changes, and it will be a major step forward for insurance companies, bringing the insurance sector closer to banks and other financial institutions.
- Insurance companies should implement a risk-based capital framework to hold sufficient capital to cover all risks that a company faces. The impact of Solvency II implementation on the operations of insurance companies in B&H should be reflected in greater protection of insurees, greater transparency, comparability, and competitiveness of the B&H market with the EU market.
- Key changes to the risk management system should be made to companies' strategic management. Risk management should be central to insurance companies' management and thus contribute to better knowledge, recognition, and management

of risks. This should positively impact the company's overall risk exposure and increase profitability and business security.

- Additional training is necessary for insurance company employees to adopt a new approach to business management and develop internal control systems. The company's management board members have a special responsibility in this matter.
- In terms of transparency requirements, insurance companies should provide an adequate system for providing business information to all interested parties, and for this purpose, a special department should be developed.

8 CONCLUSION

Insurance plays a crucial role in the financial market by collecting financial resources from insurance services sales and investing them, thus enhancing a country's economic strength. Individually, insurance is perceived as safeguarding against potential adverse occurrences. An insurer's insolvency poses a hazard primarily to the insured individuals and, subsequently, the entire financial system. This is why specific regulatory regulations govern the insurance industry.

Solvency II regulation is based on the premise that an insurer's capital requirements must be evaluated in relation to the specific risks of that insurance firm. The Solvency II Directive aims to enhance safety for policyholders and enhance market competition to facilitate the complete development of the single insurance market in the EU. The new policy encourages insurers to create their internal risk assessment models, a task likely to be undertaken by larger insurers. Smaller companies may struggle to afford the considerable financial resources required for developing such models.

The survey results support the hypothesis that the EU regulatory and supervisory requirements represent an opportunity for B&H's regulatory and supervisory authorities and insurance companies to prepare for its implementation. However, it also represents a burden since it would require additional resources and make additional systematic changes in their risk management systems, particularly in the models used to assess capital adequacy. But this is the direction where the insurance industry needs to be heading as the B&H's strategy is to become an EU member.

The survey results indicated that the main obstacle to implementing the Directive in BiH is the complexity of its rules. Many participants highlighted the necessity for more resources, education, and training for staff in all company departments. Solvency II regulation is expected to enhance the long-term profitability of larger insurance businesses while imposing a financial burden on smaller insurers. The capital increase requirements could potentially harm smaller insurers unable to financially reorganize independently from their parent businesses.

The insurance market in B&H is hindered in its development compared to the EU due to economic challenges, political instability, and unfair competition. Insurers must innovate by creating new products and extending their global business operations to remain competitive. Due to the underdeveloped financial market in BiH and the current supervision at the entity level, enterprises are ill-prepared for the challenges posed by the Solvency II Directive and entry into the single insurance market. The market requires access to the single market. Legal regulations are not a strong foundation for the financial market's growth. Thus, the companies have an inadequate basis for advancing the insurance industry, leading to the implementation of Solvency II in their operations.

Considering the significance of insurance firms as institutional investors, one may investigate methods by which the government could encourage the growth of this sector by utilizing the company's reserves to fund investment initiatives. This would significantly enhance the growth of the insurance industry. One important point that has to be addressed is whether we should expedite the application of the new regulations in the business operations of insurance companies in BiH. The analysis demonstrated that insurance companies in B&H are ill-equipped to face the additional challenges introduced by the Solvency II Directive. This study should be expanded by other researchers to assess the readiness of insurance companies in Bosnia and Herzegovina to implement the new regulations of Solvency II across the whole insurance sector.

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APPENDICES

Appendix 1: Povzetek (Summary in Slovene language)

Zavarovalnice v Evropski uniji upoštevajo regulativni okvir, ki ga opisuje direktiva Solventnost II. Ta okvir zahteva izboljšano obvladovanje tveganj, uskladitev kapitala in profila tveganja, večjo transparentnost in večjo fleksibilnost poslovanja zavarovalnic. Zavarovalniška ureditev v Bosni in Hercegovini bi morala doživeti nekaj velikih sprememb v smislu posebnosti Solventnosti II in najpomembnejših sprememb, ki jih ta direktiva prinaša za domače zavarovalnice. Poleg odločenosti za implementacijo te direktive namesto strogih pravil, kot je minimalni kapital, bo nova uredba zahtevala popolnoma drugačen pristop k celostnemu obvladovanju tveganj, prenosu tveganj in naložbam zavarovalnic. Magistrsko delo naj pojasni ključne izzive izvajanja režima Solventnosti II v majhni državi v razvoju z vidika zavarovalniških deležnikov v BiH, ob upoštevanju vseh značilnosti države in kompleksnosti Solventnosti II.

Rezultati ankete so pokazali, da je glavna ovira za implementacijo Direktive v BiH kompleksnost njenih pravil. Številni udeleženci so poudarili potrebo po več virih, izobraževanju in usposabljanju osebja v vseh oddelkih podjetja. Pričakuje se, da bo uredba Solventnost II povečala dolgoročno dobičkonosnost večjih zavarovalnic, medtem ko bo naložila finančno breme manjšim zavarovalnicam. Zahteve po povečanju kapitala bi lahko potencialno škodile manjšim zavarovalnicam, ki se ne morejo finančno reorganizirati neodvisno od svojih matičnih podjetij.

Zavarovalniški trg v BiH je v primerjavi z EU oviran v razvoju zaradi gospodarskih izzivov, politične nestabilnosti in nelojalne konkurence. Zavarovalnice morajo uvesti inovacije z ustvarjanjem novih produktov in razširitvijo svojih globalnih poslovnih operacij, da ostanejo konkurenčne. Podjetja so zaradi nerazvitega finančnega trga v BiH in trenutnega nadzora na ravni entitet slabo pripravljena na izzive, ki jih prinaša direktiva Solventnost II in vstop na enotni zavarovalniški trg. Trg zahteva dostop do enotnega trga. Pravni predpisi niso močna podlaga za rast finančnega trga. Tako imajo družbe neustrezno osnovo za napredek zavarovalništva, kar vodi v implementacijo Solventnosti II v njihovo poslovanje.

Glede na pomen zavarovalnic kot institucionalnih vlagateljev je mogoče raziskati metode, s katerimi bi vlada lahko spodbudila rast tega sektorja z uporabo rezerv družbe za financiranje naložbenih pobud. To bi bistveno pospešilo rast zavarovalništva. Pomembna točka, ki jo je treba obravnavati, je, ali naj pospešimo uporabo novih predpisov v poslovanju zavarovalnic v BiH. Analiza je pokazala, da so zavarovalnice v BiH slabo opremljene za soočanje z dodatnimi izzivi, ki jih prinaša Direktiva Solventnost II. To študijo bi morali razširiti drugi raziskovalci, da bi ocenili pripravljenost zavarovalnic v Bosni in Hercegovini za implementacijo novih predpisov Solventnosti II v celotnem zavarovalniškem sektorju.

Appendix 2: The semi-structured interview questions designed for the regulatory and supervisory authorities of FB&H/ RS/ B&H

1. What are the key challenges of the insurance market when it comes to the regulatory and supervisory framework in the Federation of Bosnia and Herzegovina / the Republic of Srpska / Bosnia and Herzegovina?
2. Are there any plans to comply with the Solvency II Directive? If yes, please specify areas for further regulatory improvements and elaborate on what actions need to be taken in order to comply with the Solvency II regulations.
3. What are the possible benefits and challenges of Solvency II implementation to the insurance companies in the Federation of Bosnia and Herzegovina / the Republic of Srpska / Bosnia and Herzegovina?
4. How would the Solvency II implementation affect the regulatory and supervisory processes in the Federation of Bosnia and Herzegovina / the Republic of Srpska / Bosnia and Herzegovina?
5. Please elaborate on the most important measures to be taken by your institution in terms of resources when it comes to the Solvency II implementation strategy. Please prioritize from 1 to 5!

Appendix 3: The semi-structured interview questions designed for the insurance companies in FB&H/RS (B&H) and the Actuarial Association of B&H

1. What are the main challenges the insurance companies in B&H currently face? Please elaborate on the top 3 key risks faced by your insurance company!
2. Please explain how Solvency II regulations would affect the risk management of the B&H insurance companies and whether potential changes would result in opportunities or burdens for the insurance companies.
3. Please elaborate on the obstacles and issues of Solvency II implementation in B&H including the cost of implementing and complying with the new solvency assessment and management regime.
4. Please elaborate on the appropriateness of the Solvency and Assessment and Management (SAM) Framework for insurers, and the sustainability of small and medium short-term insurers in Bosnia and Herzegovina.
5. How do you see the Solvency II framework as part of your company's decision-making process and the use of the internal models for Solvency II in dealing with the insurer's overall risk?

Appendix 4: Participants in research (interviewees)

Table 6: List of insurance institutions in B&H

	Name of institutions	Director	Contact
1.	Insurance Agency of B&H	Emina Jahić	Dubrovačka 6/II, Sarajevo +387 33 554 795 e-mail: info@azobih.gov.ba
2.	Insurance Agency of FB&H	Ivan Luburić	Kolodvorska 12, Sarajevo Tel: +387 33 61 08 97 e-mail: nados@nados.ba
3.	Insurance Agency of RS	Draženka Janjanin	Bana Milosavljevića 8/II, Banja Luka *Tel:* ++387 51 228 920. *e-mail:* kabinet@azors.rs.ba
4.	Actuarial Association of B&H	Nedim Gavranović, Chairman	predsjednik@aktuari.ba

Source: own work.

Table 7: Insurance companies in B&H

	Name of the insurance company	CEO	Contact
1.	ADRIATIC osiguranje d.d.	Marina Miočić-Hamidović	Tel: + 387 (0)33 755 450; e-mail: adriatic@adriatic.ba
2.	EUROHERC osiguranje d.d Sarajevo	Damir Hadžić	Tel: 033 755 515; e-mail: euroherc@euroherc.ba
3.	GRAWE osiguranje d.d. Sarajevo	Fikret Hodžić	Tel. +387 33 772 500 e-mail: office.sarajevo@grawe.ba
4.	SARAJEVO osiguranje d.d. Sarajevo	Arif Kulić	Tel: 033 664 -141, e-mail: info@sarajevoosiguranje.ba
5.	TRIGLAV osiguranje d.d.	Edib Galijatović	Tel. 033 252 111, e-mail: info@triglav.ba
6.	UNIQA osiguranje d.d. Sarajevo	Senada Olević	Tel: +033 289 000 / 001 e-mail: info@uniqa.ba
7.	BOSNA REosiguranje d.d. Sarajevo	Zlatan Filipović	Tel: 033/725-500; e-mail: info@bosnare.ba
8.	SAS-SuperP osiguranje Bijeljina	Nikola Gavrić	Tel: 055 425 800 e-mail:office@ssposiguranje.com
9.	Premium osiguranje a.d. Banja Luka	Bojan Burazor	Tel. 051 498 000 email:info@premiumosiguranje.com
10.	Wiener osiguranje Vienna Insurance Group a.d.	Borislav Doder	Tel. 051 931 100 e-mail: info@wiener.ba

Source: own work.