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Determinants of Non-Life Insurance Business Development in Ethiopia

Birhanu Deressa Negesa[1] Demis Hailegebreal[2] Muhamednur Qadire Muze[3]

KEY WORDS

Insurance, Underwriting, Leverage, Trade openness

ABSTRACT

This study examines the macro-economic and firm-specific determinants of non-life insurance business development in Ethiopia by adopting quantitative research approach followed by the explanatory research design. The National Bank of Ethiopia and the insurance companies are the sources of data that covers 9 years from the period 2010 to 2019. Twelve insurance companies were selected based on the required data availability for the purpose of this study. Based on the Hausman fixed-random specification test, random effect regression model was employed. This study found that financial development, firm size, and premium growth strongly favor non-life insurance business in Ethiopia. Similarly, GDP growth and trade openness have insignificant and positive effects on non-life business development in Ethiopia. The study, however, confirmed that underwriting risk hinders the development of Ethiopian non-life insurance business. The study also revealed an insignificant negative effects of Leverage on Ethiopian non-life insurance business development. The study finally suggested the insurance companies should give due attention on underwriting and revisit their sources of finance as leverage hinders their business development.

[1] Lecturer, Jimma University, PoBox: 378, Jimma, Ethiopia; Email: birhanuderessa67@gmail.com
[2] PhD, Assistant professor, Jimma University, PoBox: 378, Jimma, Ethiopia; Email: dhgebreal@gmail.com
[3] Lecturer, Jimma University, PoBox: 378, Jimma, Ethiopia; Email: mkadire2017@gmail.com

1. Introduction

The primary purpose of insurance is to transfer risk from one economic entity to another and to redistribute income from profitable businesses to those experiencing losses, thereby promoting stability and resource allocation (Malik, 2011). Insurance reduces risk by providing financial protection against unforeseen losses arising from globalization, liberalization, and technological advancements (Pant & KC, 2017). By minimizing risk and providing protection against uncontrollable events, insurance acts as a mechanism for indemnifying against unpredictable losses. Insurance encompasses two broad categories: life insurance and non-life insurance, also known as general insurance (Öner Kaya, 2015).

Insurance market activities are widely considered to contribute to economic growth by mobilizing long-term funds for financial markets (Alhassan & Biekpe, 2016). By reducing the need for businesses and individuals to hold large reserves to protect themselves from unexpected events, insurance facilitates investment (Feyen, Lester, & Rocha, 2011). Through risk pooling and mitigation, the insurance sector encourages additional output, investment, innovation, and competition by reducing the capital required to individually cover large losses. The insurance industry plays a crucial role in economic stability and growth. As without insurance contracts, many businesses would be unable to operate or would face significantly higher costs. Moreover, economic development is a key determinant of the structure, size, and overall growth of the insurance sector (Kafková & Kračinovský, 2008). As the standard of living improves and individuals' wealth grows, so does the demand for insurance, further stimulating economic growth.

Insurance penetration, measured as the ratio of gross insurance premiums to GDP, indicates the insurance sector's depth within an economy. A high penetration rate signifies a greater contribution by the insurance sector to the country's economic growth (Liedtke, 2007). Insurance outpaces economic development by encouraging savings, reducing unnecessary precautionary savings, and converting dormant capital into free capital by providing risk mitigation for various economic sectors. Despite the insurance sector's critical role in financial and economic development, research on the factors affecting its growth, particularly in emerging economies like Ethiopia, remains limited. Moreover, existing empirical research focuses primarily on the life insurance sector or non-life insurance determinants, such as growth, financial performance, and profitability (Kessler, Montchatlin, & Thimann, 2016).

Business development involves creating and implementing growth opportunities within or between organizations. It encompasses activities that aim to enhance an organization's long-term value through customers, markets, and relationships. Business development can be undertaken internally or externally, with the latter often involving the expertise of business development consultants (Lemar & Nekzada, 2014**).** The estimated contribution of the insurance industry to Ethiopia's GDP in 2020 is 6.601 billion Birr, and the estimated insurance density is Br. 79.95. This level of development is significantly lower than that of neighboring African countries, such as Kenya (2.83%), South Africa (17%), Namibia (6.69%), Lesotho (4.76%), Zimbabwe (4.09%), and Rwanda (1.74%). The low penetration rate suggests that the insurance sector in Ethiopia is still in its early stages of development (Bah & Abila, 2024; Olayungbo & Akinlo, 2016). Despite the low penetration rate, the insurance industry plays crucial role in Ethiopia's long-term economic growth and improved living standard. It channels household savings into productive investments, promotes economic advancement through its unique funding channels and investments, and generates employment opportunities. The sector has also witnessed rapid expansion in recent years, driven by the opening of the sector to domestic private investors (Lemar & Nekzada, 2014).

Numerous studies have examined factors influencing insurance business development in Ethiopia. For example, Ayalew (2013), Sulaiman, Migiro, and Yeshihareg (2015), and Yilma (2014) investigated determinants of life insurance demand, while Meko, Lemie, and Worku (2019) examined factors influencing non-life insurance demand. Similarly, Seyoum (2017) and Abera and Yirsaw (2020)examined determinants of non-life insurance premium growth in Ethiopia, considering both macroeconomic and firm-specific factors. Moreover, Demis Hailegebreal (2016a) extensively assessed challenges and opportunities of life insurance business in Ethiopia. Similarly, Demis Hailegebreal (2016b) examined macro and firm specific determinants of profitability of Ethiopian insurance industry.

These studies focused on profitability, demand, challenges, and prospects of insurance businesses in

Ethiopia, primarily within the life insurance sector. However, there is a limited understanding on what determines the non-life insurance business development in Ethiopia. Therefore, this study contributes to the literature by providing insights on determinates of non-life insurance business in Ethiopia. This study measured the development of non-life insurance business using gross written premium which measures the level of premiums the company gets to keep for assuming risk. The study further evaluated influences of both firm specific and macroeconomic variables on Ethiopian non-life insurance business development. This study focused on the non-life insurance due to its dominance in Ethiopian insurance market and contribution to the Ethiopian economy (NBE, 2021). This study contributes to the literature and policy by providing insights on macroeconomic and firm specific determinants of non-life insurance business in Ethiopia. This study further provides a future research direction for the fellow researchers with similar interest so that the area can be well studied in different dimensions and with different metrics.

2. Literature Review and Hypotheses

2.1 Concept of Insurance

Insurance is a risk management tool that transfers financial losses from one party (the insured) to another party (the insurer) in exchange for a fee called a premium (Kripa, 2016). It plays a crucial role in economic development by promoting financial stability, mobilizing savings, facilitating trade and commerce, and enabling risk management (Shala, Ahmeti, Berisha, & Perjuci, 2014). Insurance operates on the principle of pooling risks, where a large group of individuals contributes to a common fund to cover the losses of those who experience them. The insurance industry is typically divided into two main classes: general insurance and life assurance. General insurance covers losses arising from events such as fire, accidents, and property damage, while life assurance provides financial protection against the loss of life or income. Insurance is an essential component of a well-functioning financial system, contributing to economic growth and stability by mobilizing savings, facilitating risk management, and supporting trade and commerce (Malik, 2011).

Non-life insurance plays crucial role in the economy by transferring risk, providing indemnification for losses, and offering risk management services (Negash, Venugopal, & Asmare, 2018). It also acts as a financial intermediary and mobilizes savings. The opening up of the insurance sector has raised high hopes for its growth in emerging markets. Insurance companies should take initiative in educating people about the benefits of taking insurance and come up with innovative and flexible plans to encourage people to take policies. Non-life insurance comprises fire and lightning, marine, aviation, motor, health, travel, agriculture, liability, burglary insurance coverage, among others. Non-life insurance policies offer financial protection or indemnification to a policy holder to health insurance or damage to assets. It protects the policy holders monetarily by providing claims against accidental losses or damages. The purpose of non-life insurance is to reduce financial uncertainty and make accidental losses manageable and compensable (Webb, 2006).

2.2 Overview of Insurance business in Ethiopia

Insurance in Ethiopia is defined as an activity by an insurer to indemnify another person, in exchange for consideration called premium, against damage, destruction, loss, or liability in respect of a certain risk or peril to which the object of the insurance may be exposed or to pay a sum of money or another thing of value depending upon the happening of a certain event (Ethiopian directive number 746/12). Modern insurance business in Ethiopia started in 1905, and the number of insurance companies increased considerably to 33 by 1960 (Demis Hailegebreal, 2016a). However, after the nationalization of all private insurance companies by the *Derg Regime* in 1974, all private insurance companies ceased operation and a new public insurance company, Ethiopian Insurance Corporation, was established (Hailu, 2007).

After the change in the political environment in 1991, private insurance companies were again allowed to operate. Insurance companies in Ethiopia are supervised by the National Bank of Ethiopia under the legislative regulation of Insurance Proclamation No. 591/2008 and Article 42 of the Licensing and Supervision of Insurance Business Proclamation No. 86/1994. According to NBE (2018), the industry's aggregate contribution to national GDP is around 0.5 per cent, which is less than 1% and the insurance density is Br. 78 in 2017. Currently, there are 17 insurance companies (1 public owned and 16 private

insurance companies) which are operating as of December 2023.

The insurance business in Ethiopia is classified as long-term (life) and general (non-life) insurance business and their mix forms composite insurance business. The insurers can run either life or non-life insurance business, however, in practice, all Ethiopian insurance companies formed composite insurance business. The life insurance business in Ethiopia comprises more than 15 types of products such as death, permanent disability, accident, and medical treatment insurance services, among others. The non-life insurance encompasses more than 45 types of insurance products such as property insurance, engineering insurance, liability insurance, and pecuniary insurance and others (Abate & Kaur, 2023).

The Ethiopia's insurance industry premium volume has shown tremendous improvement since the shift of market oriented economy. The total gross premium was around ETB 200 million in 1994 and rise to ETB 13.9 billion in 2021 of which the private insurance sector reported 92.8%. However, Ethiopia's insurance premium volume is extremely low compared to the African average. Thus, Ethiopia ranks among the lowest in the world in insurance premium volume. The Ethiopian insurance sector aggregate contribution to GDP was about 0.34% and the gross premium per capita was USD 2.7 in 2019. This, however, shows a slight improvement in 2021 with a penetration rate of 0.34% and a density rate of USD 2.9 which are extremely lower than the global averages of 6.9% and USD 874 in 2021(Nkwor & Ozor, 2022). The figure is also significantly low compared to African countries' penetration and density as can been see in the table below.

Table 1. Insurance Penetration and Density of Selected African countries

S.N	Country	Penetration (%)	Density (USD)
1.	Ethiopia	0.34	2.9
2.	South Africa	16	835
3.	Morocco	4.45	136.2
4.	Tunisia	2.4	80.3
5.	Kenya	2.2	44
6.	Cote D'ivoire	1.12	26
7.	Ghana	1.05	24
8.	Egypt	0.82	29.5
9.	Algeria	0.71	23.7
10.	Nigeria	0.46	6

Source: https://www.atlas-mag.net; https://www.globaldata.com; https://statisticstimes.com

2.3 Theoretical Literature

Agency theory (Jensen & Meckling, 1976) serves as the foundation for understanding the intermediary relationship between insurance companies and their agents. This theory posits that there can be conflicts of interest between principals (insurance policyholders) and agents (insurance agents) due to the delegated nature of the relationship. This can lead to agency losses, where the agent's actions may not fully align with the best interests of the principal. The low level of trust in the insurance industry by the insuring public contributes to the reliance on insurance agents and brokers to represent their interests.

Porat, Spiegel, Yaari, and Ben Zion (1991) further explored the impact of the allocation process throughout an individual's life on insurance demand. Furthermore, Yaari (1965) introduced the life-cycle approach, emphasizing the influence of uncertainty in lifespan, bequest preferences, and retirement planning on insurance demand. Moreover, Outreville (1996) developed the first theoretical model explaining the demand for insurance. This model suggests that insurance demand is influenced by various factors, including the individual's life-cycle stage, wealth, income, and risk preferences. Again, Lewis (1989) expanded Yaari (1965)'s model by considering the preferences of beneficiaries and dependents, incorporating the household's overall risk profile. He found that the probability of the main earner's death and the degree of risk positively correlate with life insurance demand, while household wealth and policy-loading factors

negatively correlate with demand. However, numerous other factors influence insurance consumption, including insurance price, monetary system stability, banking and market sector development, urbanization, and corruption control. These factors are often reflected in the policy-loading factor.

Again, Mossin (1968) extended the theoretical framework by introducing the concept of an inferior good, suggesting that wealthier individuals may be more inclined to self-insure and reduce their demand for insurance. However, wealth and income are often correlated with other factors that influence insurance demand, such as asset exposure to risk and risk attitudes. Likewise, Mayers and Smith Jr (1986) developed a theoretical model of property insurance demand, assuming that individuals can accurately assess the probabilities of loss events. Factors influencing insurance consumption in this model include wealth, probability of loss, insurance price, value of assets at risk, and individual utility functions. They found that the optimal insurance purchasing decision may involve either full coverage or no coverage depending on the relative values of these factors. More importantly, Szpiro (1985) proposed an insurance demand theory based on the expected utility paradigm, suggesting that an individual's insurance purchase decision depends on income, wealth, insurance price, risk aversion, and probability of loss.

2.4 Empirical literature review

The study of Beck and Webb (2003) revealed that countries with high income per capita levels, more developed banking sectors, and lower inflation tend to consume larger amounts of life insurance. In addition, life insurance consumption is observed to be positively influenced by private savings rate and real interest rate. However, factors such as education, life expectancy, young dependency ratio, and size of social security did not appear to be robustly associated with life insurance consumption. Similarly, Hwang and Gao (2003) identified several significant factors which have influenced people in China to purchase life insurance products in the past decade are directly related to the increase in the level of income, the increase in education levels, and the change in the social structure (such as family structure and urbanization). However, the research fails to show the negative effect of inflation on the life insurance demand in China, even China experienced high inflation in the mid-1990s. Similarly, Pervan and Kramaric (2012) found that diversification and inflation have a negative and statistically significant influence on insurer's profitability, while market share, GDP, and past profitability have a positive and statistically significant impact on profitability. Moreover, Demis Hailegebreal (2016b) found that underwriting risk, technical provision, leverage, and inflation have negative and significant effects on profitability, while premium growth, age of the company, solvency ratio, and GDP have statistically positive and significant effects on profitability.

Moreover, Lee (2014) found that underwriting risk, financial leverage, reinsurance dependence, financial holding, and input cost has significantly and negatively related to the ROA whereas the return on investment is positively and significantly related to ROA. This finding implies that high underwriting risk, subsidiaries of financial holding group compared with other insurance companies leads to lower profitability measured by ROA. In addition, the economic growth rate has a significant influence on profitability in the operating ratio model but an insignificant influence on profitability in the ROA model. Likewise, Zhang and Zhu (2005) found that foreign direct investment is more significant for property insurance than for life insurance. Per capita GDP is the only variable significant for all measures of life consumption, while the total population, savings deposit, education attainment, telephone ownership per capital, social welfare expenditure, and young dependency are significant for life premiums. Variables such as wage level, savings deposit, and investment in fixed assets report their significant effect on the demand for property insurance.

The study conducted by Biru and Gemachis (2017) confirmed industry concentration ratio and leverage have a statistically significant and positive relationship with profitability, while diversification, underwriting risk, and reinsurance dependence have a negative and statistically significant relationship with profitability. Moreover, Elango and Jones (2011) found that demographic factors explain a greater variance relative to economic and institutional variables for insurance density, while economic factors explain the greatest amount of variance in terms of insurance growth rates. Similarly, Munir, Khan, and Jamal (2012) found that financial development, gross savings, income level affect life insurance consumption positively, while the price of insurance is inversely linked with life insurance demand. In addition, the demographic variables of crude birth rate, crude death rate, old age dependency

ratio, urbanization also have a positive relationship with life insurance demand.

Moreover, Yilma (2014) found that income, inflation, life expectancy, education, and real interest rate are factors that significantly influence demand for life insurance in Ethiopia. Similarly, Petkovski and Jordan (2014) identified those non-life insurance penetration increases with higher per-capita income and the number of passenger cars per 1,000 people in 16 countries in Central and South-Eastern Europe (CSEE). The study of Dragos (2014) evidenced income is a significant and positive determinant of non-life insurance demand in CEE countries but not for life insurance demand. Urbanization has a positive influence on Asian country's life insurance demand but not in the CEE countries and it is significant for non-life insurance demand in both regions. Education was found significant only for non-life insurance in both regions, while income distribution affects both regions' insurance demand negatively. Likewise, Zyka and Myftaraj (2014) confirmed that population size; economic growth, urbanization, and paid claims are factors that have a positive impact on the aggregate insurance premium of Albania. Again, Hodula, Janků, Časta, and Kučera (2020) found that insurance premiums are driven by per capita income, population size and density, demographic structures, income distribution, the size of the public pension system, state ownership of insurance companies, the availability of Financial Stability Report, private credit, and religion. Again, Sulaiman et al. (2015) found that inflation had a statistically noticeable negative impact on the demand and supply in the life insurance market in Ethiopia. The young dependency ratio also had a statistically significant negative effect on life insurance market demand, while the old dependency ratio had a statistically significant positive relation to life insurance supply. These studies suggest that different factors can affect the development of the insurance industry in emerging markets. Policymakers should consider these factors when developing policies to promote the growth of the insurance industry.

More importantly, Abbas and Ning (2016) found that GDP per capita negatively affects insurance premiums in Tanzania, while inflation and real interest rate affect Tanzania's insurance industry negatively and significantly, and GDP growth rate is positively and significantly related to the growth of the insurance industry. Trinh, Nguyen et al. (2016) found that economic freedom, income, bank development, urbanization, culture, and law systems are the key drivers of non-life insurance expenditure across countries, even if their impacts differ significantly between the groups of developed and developing countries. Similarly, Burić, Smolović, Božović, and Filipović (2017) found that GDP and wages have a significant and positive impact on demand for life insurance in Western Balkans, while the impact of the unemployment rate and interest rate is negative. (Meko et al., 2019) found that real interest rate, life expectancies, age dependency ratio, urbanization, and inflation have a positive and significant effect at 1% and 5% significance level on life insurance demand in Ethiopia, whereas GDP per capita and price of insurance were found insignificant to affect life insurance demand in Ethiopia.

2.5 Hypothesis development

Economic growth leads to increased disposable income among consumers, who are more likely to purchase assets and seek protection for those assets through insurance. According to Cummins and Outreville (1985), economic development increases, so does the volume of business and the capacity of insurance companies to provide services. Similarly, Christophersen and Jakubik (2014) found a strong positive correlation between gross written premium and economic growth. Recently, Demis Hailegebreal (2016b) confirmed a favorable influence of economic growth on Ethiopian insurance industry's profitability. Based on the results of these studies, the following hypothesis is developed.

Hypothesis 1: ***Gross domestic product (GDP) growth has statistically significant positive effects on non-life insurance business development in Ethiopia***

A well-developed financial system, characterized by efficient and accessible financial services, fosters a favorable environment any business in general (Demis Hailegebreal, 2022a) and for non-life insurance growth. The study of Beck and Webb (2003) depicted a favorable influence of banking sector development on the life insurance demand. According to Outreville (1996) financial sector development has a considerable favorable influence on non-life insurance business development. Similarly, Zewge (2019) demonstrated financial development plays a crucial role in promoting non-life insurance consumption. Thus, the following hypothesis is assumed.

Hypothesis 2: ***Financial development has statistically significant positive effect on non-life insurance business development in Ethiopia***

Trade openness reveals the sum of imports and exports scaled by the country's annual GDP. Sawadogo (2019) evaluated the impact of insurance development on international trade using a sample of 52 developing counties that confirmed countries with a better developed insurance sector have a comparative advantage in international trade in the long-run. This result shows a causal relationship between trade openness and insurance business development. Accordingly, Petkovski and Jordan (2014) confirmed that more open countries accumulate more insurance assets. Moreover, Sawadogo (2019) discovered a new theoretical trade models that confirmed trade and FDI complement each other and contributing to an increase in the insurance services. Therefore, the following hypothesis is postulated.

Hypothesis 3: ***Trade openness has statistically significant positive effect on non-life insurance business development in Ethiopia***

The influence of firm size on insurance business development has two sides. The first side depicts firm size makes firms reluctant and creates wrong sense of security. In this regard, studies confirmed the unfavorable effects of firm size on the development of insurance sector. However, the second side that estimated the favorable influence of firm size on insurance business development is more governing. In this regard, several studies examined evaluated the influence of firm size on insurance business development and depicted a favorable influence of firm size on insurance business development (Ayele, 2012; Demis Hailegebreal, 2016b; Malik, 2011; Mehari & Aemiro, 2013; Öner Kaya, 2015; Reshid, 2015). The results of these studies demonstrated that larger insurance companies may have competitive advantage due to their economies of scale, access to capital, and risk management capabilities. Therefore, the following hypothesis is developed.

Hypothesis 4: ***Firm size has statistically significant positive effect on the development of non-life insurance in Ethiopia***

Underwriting risk, the risk of loss associated with insurance claims, can negatively impact insurance company profitability and growth. The study of Barth and Eckles (2009) confirmed a negative influence of premium growth on changes in loss ratios, suggesting that premium growth alone does not necessarily mitigate underwriting risk. Companies with high underwriting risk are more likely to experience financial instability due to higher claims expenses. similarly, the study of Demis Hailegebreal (2016b) demonstrated the harmful effects of underwriting risk on the profitability of Ethiopian insurance industry. Accordingly, the following hypothesis is predicted.

Hypothesis 5: ***Underwriting risk has statistically significant negative effect on general insurance business development in Ethiopia***

Premium growth, the increase in insurance premiums collected, is a direct measure of a company's growth and profitability. Empirical research has shown that premium growth favors insurance businesses. For instance, Demis Hailegebreal (2016b), Chen and Wong (2004), and Kripa (2016) demonstrated a favorable influences of premium growth on insurance business performance. Based on the results of these empirical studies, the following hypothesis is developed.

Hypothesis 6: Premium growth has statistically significant positive effect on general insurance business development in Ethiopia

The relationship between leverage ratio and insurance company profitability is complex and has been the subject of conflicting research findings. Empirical studies confirmed a negative effects of leverage ratio on insurance business development (Berhe & Kaur, 2017; Demis Hailegebreal, 2016b; Kazeem, 2015; Mehari & Aemiro, 2013; Sumaira & Amjad, 2013). The implication of the results of these studies is that leveraged firms are forced to use their income to pay their leverage that ultimately hinders their business development. Accordingly, the following hypothesis is developed.

Hypothesis 7: ***Leverage ratio has statistically significant negative effect on non-life insurance business development in Ethiopia***

2.6 Conceptual framework

The non-life insurance business development might be influenced by both internal and external factors as discussed in previous sections. This conceptual framework is mainly the summary of the literature review and the hypotheses developed above. The framework clearly indicates the association between

the macro & firm specific variables and the non-life insurance business development. The framework shows the association of macro-economic variables which are GDP growth, trade openness, and financial development and the non-life insurance business development which is measured by the gross written premium. Moreover, the framework links firm specific variables namely firm size, underwriting risk, premium growth, and leverage ratio with the non-life insurance business development in Ethiopia. The foundation of this framework is the literature review and the hypothesis development.

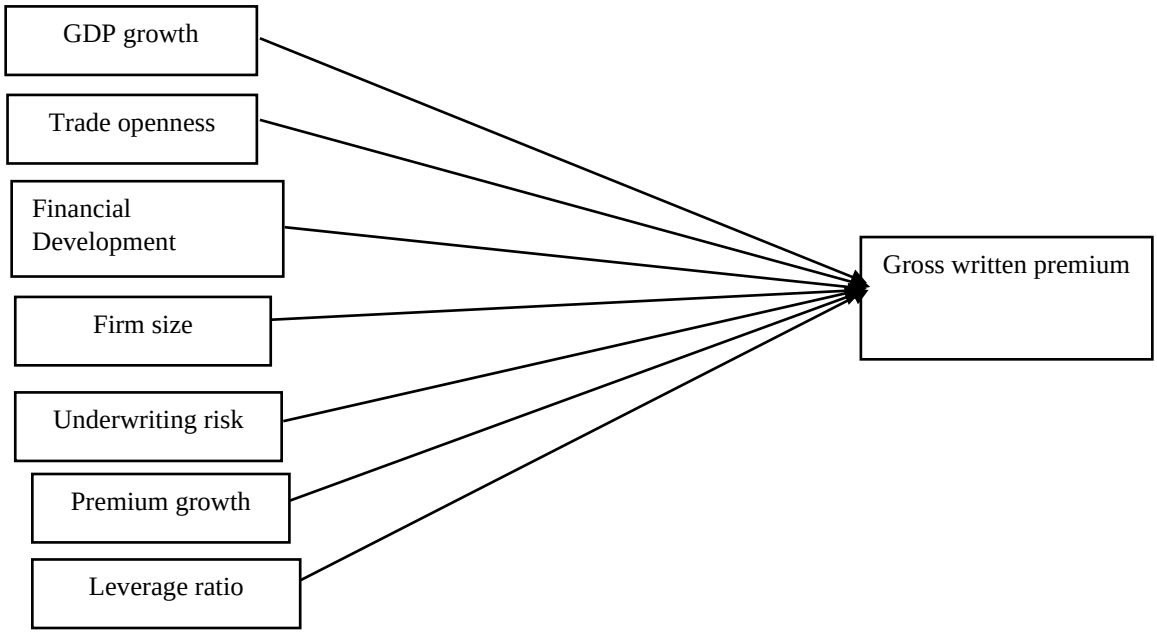

Figure 1. Conceptual framework

3.1 Data and Source

The study utilized secondary data for both macro-economic and firm level variables that forms panel dataset. The sources of data for macro-economic variables is mainly World Bank and the National Bank of Ethiopia. However, the data for firm level data were collected from both insurance companies and the National Bank of Ethiopia.

3.2 Research Design and Approach

The purpose of this study is examining determinants of non-life insurance business development in Ethiopia. Therefore, this study employed quantitative research approach followed by explanatory research design which are appropriate for exploring the association between macro-level and firm-level variables (factors) with the non-life insurance business development in Ethiopia.

3.3 Sample Size and Sampling Technique

Currently, 17 insurance companies are operating in Ethiopia and all of them are providing a composite (life and non-life) insurance services. However, for the purpose of this study, only the non-life portion of their business is considered as rationalized in the introduction of this study. For the purpose of this study, 12 insurance companies are purposely selected based on the data availability for the study period covering 10 year's data (2010 to 2020). This sample comprises 11 private insurance companies namely Awash Insurance Company S. C (AIC), Africa Insurance Company S. C (AIC), National Insurance Companies of Ethiopia (NICE) S.C, Nyala Insurance Company S.C, Nile Insurance Company S.C, The United Insurance Company S.C, Global Insurance Company S.C, NIB Insurance Company S.C, Lion insurance corporations, Ethio-life and General insurance S.C and Oromia insurance company and one public insurance company called Ethiopia Insurance Corporation (EIC).

3.4 Variable and Their Measurement

3.4.1 Dependent Variable

Gross written premium

The non-life insurance business development is measured by the gross written premium in this study.

Gross written premium is the most usual and simplest indicator of insurance industry development and proxied by the total premium written and assumed by an insurer before deductions for reinsurance and ceding commissions and are the principal source of an insurance company's revenues. Therefore, gross written premium is used as proxy of insurance business development consistent with prior studies (Čepeláková, 2015; Christophersen & Jakubik, 2014; Zhang & Zhu, 2005). The natural logarithm of gross written premium is used to manage the outlier's problem in our dataset.

$$GWP = Log\ of\ GWP$$

3.4.2 Independent variables

(a) GDP growth

Economic growth indicates an increase in the size of countries' economy over a series of time which is measured by the total production of goods and services in the economy. The typical economic growth proxy is the gross domestic product (GDP) growth that is computed as a percentage change in annual GDP. Economic growth or GDP growth refers to a percentage in real GDP that is adjusted to the effects of inflation. Unlike nominal GDP, real GDP is an inflation-adjusted measure that reflects the actual value of gross domestic products and services. In this study, the real GDP growth is used that is computed as a percentage change in annual real GDP.

$$GDP = \frac{Real\ GDP_t - Real\ GDP_{t-1}}{Real\ GDP_{t-1}} * 100$$

(b) Financial development (FID)

Broad money measures the volume of money or its supply in a national economy and is used as the most inclusive measurement of financial development. It is the most inclusive method of computing countries' money supply including narrow money along with other assets that can be easily converted into cash to purchase goods and services. This argument implies broad money measures financial development that brings liquidity in the economy. In this study, we use the broad money to GDP ratio (M2/GDP) as a measure of financial development.

$FID = \frac{M2}{GDP}$, where FID is financial development, $M2$ is broad money, GDP is gross domestic product.

(c) Trade openness

It is evidenced that relatively open economies are grow faster than their closed counterparts in any dimension of the economic growth. Trade openness is the measure of the extent to which a country is engaging in global trade and finance. The argument in this study thus is trade openness improves the development of Ethiopian non-life insurance business as insurance business development is associated with economic development. Trade openness is measured by the sum of exports and imports and normalized by GDP. Accordingly, this study used the sum of import and export to GDP as a proxy to trade openness.

$TO = \frac{EX+IM}{GDP}$ Where TO is trade openness, EX is export, IM is import, and GDP is gross domestic product.

(d) Size of the firm (FS)

Firm size has unclear influence on firms' development in any dimension. Empirical studies confirmed a positive (Demis, Wang, Misraku, & Yidersal, 2019) and negative (Demis Hailegebreal, 2022b) influences on firms' business operation and performance. The total assets of firms is the appropriate measure of its size and we used a total assets of insurance companies to measure their size. We transformed the total assets into its natural logarithm to handle the possible outlier issue in our dataset.

$$FS = logarithm\ of\ totla\ ssest$$

(e) Underwriting risk (U risk)

Underwriting risk is the risk that insurers will suffer losses due to the economic situation or the occurring rate of incidents have changed contrary to the forecast made at the time price or premium are was set. It may arise from inaccurate assessment of the risk during underwriting the insurance policy or collectability that leads to a significant increase in the cost of the insurance. Consequently, the premium collected will not be sufficient to cover the cost of coverage and the insurer will suffer from such risk. The common measure of underwriting risk is the ratio of claim incurred and premium earned. When this ratio increases, it implies that the underwriting risk is increasing. In the other hand, an increase of this ratio shows that the claim exceeded the premium and the insurer will not be able to cover its claim with the premium collected.

$$U\ risk = \frac{claim\ incurred}{premium\ earned}$$

(f) Premium Growth

Premium growth over time might be accomplished by selling more insurance policies or increasing the rates of the existed policies. The growth in premium is the manifestation of a higher rate of market penetration, consumer confidence, and better performance of the

insurer. Premium growth is proxied by the percentage change in gross written premium.

$PG = \frac{GWP_t - GWP_{t-1}}{GWP_{t-1}}$, where PG is premium growth, GWP_t the current period gross written premium, GWP_{t-1} is a previous year gross written premium.

(g) Leverage ratio

Leverage indicates the level of debt financing of the insurer and leverage ratio measures the level of debt financing in comparison with equity financing of the company. The leverage ratio also highlights business's financial leverage in terms of its assets, liabilities, and equities. Moreover, it measures how much of a company's capital raised from debt and indicates whether a business can make good on its financial obligation. Leverage is measured as the ratio of total liabilities and assets.

$$LR = \frac{Total\ Liabilities}{Total\ Assest}$$

Table 2. Variables and Measurements

Variable	Definition	Measurement
Gross written premium	Natural logarithm of gross written premium	$GWP = Log\ of\ GWP$
Gross domestic product	real GDP growth	$GDP = \frac{Real\ GDP_t - Real\ GDP_{t-1}}{Real\ GDP_{t-1}} * 100$
Financial development	broad money to GDP ratio	$FID = \frac{M2}{GDP}$
Trade openness	the sum of import and export to GDP	$TO = \frac{EX + IM}{GDP}$
Underwriting risk	the ratio of claim incurred and premium earned	$U\ risk = \frac{claim\ incurred}{premium\ earned}$
Firm size	natural logarithm of total assets	$FS = logarithm\ of\ totla\ ssest$
Premium growth	percentage change in gross written premium	$PG = \frac{GWP_t - GWP_{t-1}}{GWP_{t-1}}$
Leverage ratio	the ratio of total liabilities and assets	$LR = \frac{Total\ Liabilities}{Total\ Assest}$

3.5 Econometrics model

This study evaluates the influences of macro-economic and firm level variables on the development of non-life insurance business in Ethiopia. The development of non-life insurance business (the dependent variable) is proxied by the natural logarithm of gross written premium. The mathematical computation of the association between the macro-economic and firm level variables with non-life insurance business development is presented as follows.

$$GWP_{it} = \beta_o + \beta_1 GDP_t + \beta_2 FID_t + \beta_3 To_t + \beta_4 U\ risk_{it} + \beta_5 FS_{it} + \beta_6 PG_{it} + \beta_7 LR_{it} + \mu$$

Where β_o is constant, β_1 to β_7 are coefficients, GDP_t is gross domestic product at time t, FID_t is financial development at time t, To_t is trade openness at time t, $U\ risk_{it}$ is underwriting risk of company i at time t, FS_{it} is firm size of company i at time t, PG_{it} is premium growth of company i at time t, LR_{it} is leverage ratio of company i at time t, and μ is the error term.

4. Results and Discussions

4.1 Descriptive Statistics

The average gross written premium (GWP) of Ethiopia's non-life insurance business is Ethiopian birr (ETB) 12,300,000,000 during the last 10 years with a minimum of ETB 1561921 and a maximum of ETB 547,000,000,000, respectively. Ethiopia reported an average GDP growth rate of 6.8 percent

during the last 10 years with a variation of 9.46 percent and 4.05 percent. Ethiopia also reported an average broad money to GDP ratio of 29 with a maxim of 33.54 and a minimum of 25.34. Trade openness has a mean value of 0.39076, with a minimum of 0.2882 and a maximum of 0.4923. The sample insurance companies reported an average total assets of ETB 696,000,000 with a maximum of ETB 4,340,000,000 and ETB 27,200,000 during the last ten years. Underwriting risk (UR) has a mean value of 0.281, with a minimum of -0.462 and a maximum of 1.562. Premium growth (PG) had a mean of 0.056 and a standard deviation of 0.0621218, with a minimum of 0.001321 and a maximum of 0.284. The leverage ratio's mean value is 0.7146238, with a minimum of 0.5429186 and a maximum of 0.822.

Table 3. Descriptive statistics

Variable	Mean	Std. Dev.	Min	Max
GWP	12,300,000,000	5.85e+10	1561921	547,000,000,000
GDP growth	6.8149	1.429	4.054	9.461
FD	29.118	2.498	25.345	33.541
TO	0.391	0.069	0.288	0.492
size	696,000,000	7.78e+08	27,200,000	4,340,000,000
U risk	0.281	0.291	-0.466	1.5622
PG	0.056	0.062	0.001	0.284
LR	0.175	0.145	0.028	0.975

4.2 Correlations Analysis

The correlation matrix is used to show the association between independent variables and shows whether sever collinearly among the independent variables existed or not. Accordingly, the highest correlation of 0.735 is reported between trade openness and financial development and this correlation is in the tolerable threshold value of multicollinearty problem. However, the association between other independent variables are too small indicating multicollinearty problem is not an issue in this study.

Table 4. Correlation analysis

	GDP	FD	TO	size	U risk	PG	LR
GDP	1						
FD	-.043	1					
TO	-.019	0.735	1				
size	-.178	-.311	-0.369	1			
U risk	0.049	-.429	-.520	0.635	1		
PG	.0716	-.095	-.047	-.037	-.026	1	
LR	-0.091	0.395	0.458	-.619	-.588	0.025	1

4.3 Multicollinearty test

The correlation analysis reveals the absence of multicollinearty problem in this study. In addition to the correlation analysis, we run the variance inflation factors to make sure that multicollinearty is not an issue. The threshold value of VIF that indicates the existence of multicollinearty problem is 10. Hence, if the VIF value of any variable is greater than 10, it shows a serious multicollinearty problem. As can be

seen in the table below, the highest VIF value is 4.05 which is significantly lower than the threshold value of 10. Summing up, both the correlation analysis and the VIF confirmed that multicollinearty problem is not an issue in this study.

Table 5. Variance Inflation Factor

Variable	VIF	1/VIF
U risk	4.37	0.228774
LR	4.05	0.246742
TO	2.45	0.408347
FD	2.22	0.451324
size	1.91	0.523492
GDP	1.12	0.896605
PG	1.02	0.980145
Mean VIF	2.45	

4.4 Hausman Fixed-Random specification test

The data used in this study is panel in its nature. Random or fixed effect models and OLS are the common panel data analysis models. However, the Hausman specification test is applied to choose more appropriate model for a given dataset. Hence, we run a Hausman fixed-random specification test that suggests fixed effect model is not appropriate. We thus run a Breush and Pagan Lagrangian multiplier test to discriminate the better model from random effect model and OLS. The test result finally suggested the random effect model is appropriate for our dataset (p value=0.000).

4.5 Regression Results Analysis

The random effect regression result confirmed that financial development, firm sizes, and Premium growth have strong and positive effect on Ethiopian non-life insurance business development as measured by the gross written premium. The result further demonstrates a favorable effect of GDP on Ethiopian non-life insurance business development. Similarly, trade openness found to have positive but insignificant association with non-life insurance business development in Ethiopia. However, underwriting risk has strong harmful effect on the development of non-life insurance in Ethiopia. Likewise, leverage insignificantly hinders Ethiopian insurance business development. Overall, the explanatory variables have an aggregate influence value of 42 percent on Ethiopian non-life insurance business's development as indicated by adjusted R-square.

Table 6. Regression result

GWP	Coef.	SE	T	p-value	[95% CI	interval]
GDP	0.827	0.449	1.84	0.065	-0.053	1.707
FD	0.049	0.017	2.86	0.004	0.015	0.082
TO	0.121	0.162	0.75	0.456	-0.197	0.438
size	16.783	4.609	3.64	0.000	7.747	25.818
U risk	-0.191	0.052	-3.67	0.000	-0.293	-0.089
PG	7.933	2.225	3.57	0.000	3.573	12.293
LR	-0.0287	0.095	-0.30	0.761	-0.214	0.156

Constant	24.046	7.975	3.02	0.003	8.414	39.677
Adj. R-square		0.42				
F		0.00				
Root MSE		1.4091				

4.6 Discussion Results

GDP growth has a positive relationship with the development of non-life insurance in Ethiopia, which is consistent with the study of Zewge (2019) and Demis Hailegebreal (2016b) but contradicts with the results of Abbas and Ning (2016) and Outreville (1996). The result of this study implied that Ethiopia's economic growth favors the development of non-life insurance business in the country. The improvement in the economic growth is the driver for investment, infrastructure development, and manufacturing which leads the insurance services at it's to demand for protecting the financial damage of those economic parameters. This study thus confirmed the first hypothesis that postulate the positive effects of GDP on non-life business development in Ethiopia. Similarly, financial development has a favorable influence on non-life insurance development in Ethiopia. This aligns with previous studies of Lewis (1989), Sen (2008), Petkovski and Jordan (2014), Beck and Webb (2003), and Munir et al. (2012) but inconsistent with the study of Trinh (2016) and Zewge (2019). The favorable effect of financial development on the development of non-life insurance business is a manifestation that financial development supports the insurance business by encouraging companies create new insurance products and widen their services. On the other hand, the insurance business development is part of the financial development and an improvement in financial development is an improvement in insurance development. The result, thus, confirmed the second hypothesis that state the positive effects of financial development on Ethiopian non-life insurance business development. Trade openness has a positive but statistically insignificant (p-value = 0.456) effect on non-life insurance business development in Ethiopia. This result implied that the openness of the country to international trade improves the development of insurance business like other sectors. Thereof, the result proves the third hypothesis that assumes trade openness favors non-life insurance business development in Ethiopia.

Firm size has a positive and statistically significant (p-value = 0.000) effect on the development of non-life insurance business in Ethiopia which is consistent with the study of Malik (2011) and Demis Hailegebreal (2016b); and the fourth hypothesis. This study confirms the negative influence of underwriting risk on Ethiopian non-life insurance business development. This implied that higher underwriting risk leads to lower gross premium and is detrimental to the insurance business. This finding is consistent with previous studies of Lee (2014) and Demis Hailegebreal (2016b). Premium growth has a positive and statistically significant (p-value = 0.000) association with the development of non-life insurance business in Ethiopia implying that higher premium growth leads to higher gross premium and is beneficial for insurance business development. This finding is consistent with the study of Demis Hailegebreal (2016b) and Al-Shami (2008) but contradicts with the study of Abera and Yirsaw (2020). Leverage ratio has a negative but statistically insignificant (p-value = 0.761) influence on the non-life insurance development in Ethiopia which is consistent with prior study of Demis Hailegebreal (2016b) but contradicts with the study of Adams and Buckle (2003) and Elango and Jones (2011). The result clearly implied that high leverage hinders insurance business development because large portions of cash flow they generated might be used to pay their interest liability.

5. Conclusions

This study evaluates determinants of non-life insurance business development in Ethiopia using data from 11 private and one public insurance companies between 2010 and 2020. The sources of data for macro-level data are World Bank and National Bank of Ethiopia while firm-level data is obtained from insurance companies and the National Bank of Ethiopia. The study employed a quantitative research approach along with explanatory research design which are appropriate for the dataset used for investigation.

The study employs a random effect model, based on the Hausman fixed-random specification test, and evaluate the determining influences of macro and micro level variables on non-life insurance business development in Ethiopia. The result confirmed a favourable influences of GDP growth, financial

development, trade openness, premium growth, and firm size on the development of Ethiopian non-life insurance business development. However, the study demonstrated a negative effects of underwriting risk and leverage on non-life insurance business development.

This study contributes to literature, policy, and management by investigating determinants of non-life insurance business in Ethiopia. The study finally suggested that Ethiopian insurance companies should maximize their size through opening new branches and converting non-income generating assets to income-generating ones can lead to increased accessibility, financial strength, and profitability.

6. Recommendations

Companies should broaden their product offerings, improve service quality, and modify products to meet local needs to attract new customers and increase gross written premiums. Ethiopian insurance companies should maximize their size through opening new branches and converting non-income generating assets to income-generating ones can lead to increased accessibility, financial strength, and profitability. To minimize claims incurred and increase earned premiums, companies should impose higher rates on policies with higher risk or implement other risk mitigation strategies.

7. Further Research Direction

This study examines the effect macro and micro level variables on the development of non-life insurance business in Ethiopia. However, we suggest fellow researchers evaluate institutional, demographic, and cultural variables on the insurance business development in Ethiopia. We further suggest future researchers run robustness check using different analysis techniques and alternative insurance business development measurements.

Conflict-of-interest statement

The authors have no conflicts of interest to declare and all co-authors have seen and agree with the contents of the manuscript. We assure that the submission is original work and is not under review at any other publication. Finally, the authors sincerely acknowledge the support of Jimma University for effective completion of this research work. We would also like to thank insurance companies operating in Ethiopia and National Bank of Ethiopia for their support in data provision.

References

Abate, M. T., & Kaur, R. (2023). Insurance Sector in Ethiopia: Evolution and Current State.

Abbas, A. O., & Ning, L. (2016). Factors that Drive the Development of Insurance Industry in Tanzania. *World Journal of Finance and Investment Research, 1*(1), 1-12.

Abera, H. B., & Yirsaw, T. D. (2020). Firm Specific Determinants of General Insurance Business Solvency Margin: Evidence from Ethiopia.

Adams, M., & Buckle, M. (2003). The determinants of corporate financial performance in the Bermuda insurance market. *Applied Financial Economics, 13*(2), 133-143.

Al-Shami, H. A. A. (2008). *Determinants of insurance companies' profitability in UAE*. Universiti Utara Malaysia.

Alhassan, A. L., & Biekpe, N. (2016). Determinants of life insurance consumption in Africa. *Research in International Business and Finance, 37*, 17-27.

Ayalew, A. (2013). Determinants of life insurance in Ethiopia *CLEAR International Journal of Research in Commerce & Management, 4*(2).

Ayele, A. G. (2012). Factors affecting profitability of insurance companies in Ethiopia: Panel evidence. *Addis Ababa University, Ethiopia*.

Bah, M., & Abila, N. (2024). Institutional determinants of insurance penetration in Africa. *The Geneva Papers on Risk and Insurance-Issues and Practice, 49*(1), 138-179.

Barth, M. M., & Eckles, D. L. (2009). An Empirical Investigation of the Effect of Growth on Short-Term Changes in Loss Ratios. *Journal of risk and insurance, 76*(4), 867-885.

Beck, T., & Webb, I. (2003). Economic, demographic, and institutional determinants of life insurance consumption across countries. *The world bank economic review, 17*(1), 51-88.

Berhe, T. A., & Kaur, J. (2017). Determinants of insurance companies' profitability Analysis of insurance sector in Ethiopia. *International journal of research in finance and marketing (IJRFM), 7*(4), 124-137.

Biru, & Gemachis. (2017). profitability determinants in the insurance sector in Ethiopia: a panel evidence on non-life insurance. *Addis Ababa University Addis Ababa, Ethiopia*.

Burić, M. N., Smolović, J. C., Božović, M. L., & Filipović, A. L. (2017). Impact of economic factors on life insurance development in Western Balkan Countries. *Zbornik radova*

Ekonomskog fakulteta u Rijeci: časopis za ekonomsku teoriju i praksu, *35*(2), 331-352.

Čepeláková, L. (2015). The Impact of the Macroeconomic Environment on Insurance Companies.

Chen, R., & Wong, K. A. (2004). The determinants of financial health of Asian insurance companies. *Journal of risk and insurance*, *71*(3), 469-499.

Christophersen, & Jakubik. (2014). Insurance and the macroeconomic environment, No. 1, EIOPA Financial Stability Report-Thematic Articles, EIOPA, Risks and Financial Stability Department.

Cummins, J. D., & Outreville, J. F. (1985). An international analysis of underwriting cycles in property-liability insurance. *Foundations of Insurance Economics: Readings in Economics and Finance*, 609-625.

Demis, H., Wang, M., Misraku, M., & Yidersal, D. (2019). Financial Slack and Firm Performance in Africa: The Mediating Effects of the Banking Sector and Stock Market Development. *Global Journal of Management and Business Research*.

Demis Hailegebreal. (2016a). Challenges and Opportunities of Life Insurance Business in Ethiopia.

Demis Hailegebreal. (2016b). Macroeconomic and firm specific determinants of profitability of insurance industry in Ethiopia. *Global Journal of Management and Business Research*, *16*(7), 30-31.

Demis Hailegebreal. (2022a). The interaction effects of financial development on slack and performance nexus of African firms. *Journal of Business and Administrative Studies*, *14*(2), 12-30.

Demis Hailegebreal. (2022b). R&D investment and performance Nexus of African firms: Under the three stages Sigmoid Curve Model. *Horn of African Journal of Business and Economics (HAJBE)*, *5*(2).

Dragos, S. L. (2014). Life and non-life insurance demand: the different effects of influence factors in emerging countries from Europe and Asia. *Economic research-Ekonomska istraživanja, 27*(1), 169-180.

Elango, B., & Jones, J. (2011). Drivers of insurance demand in emerging markets. *Journal of Service Science Research*, *3*, 185-204.

Feyen, E., Lester, R. R., & Rocha, R. d. R. (2011). What drives the development of the insurance sector? An empirical analysis based on a panel of developed and developing countries. *An Empirical Analysis Based on a Panel of Developed and Developing Countries (February 1, 2011). World Bank Policy Research Working Paper*(5572).

Hailu. (2007). Insurance in Ethiopia: historical development, present status and future challenges. *(No Title)*.

Hodula, M., Janků, J., Časta, M., & Kučera, A. (2020). *On the Determinants of Life and Non-life-insurance Premiums*: Czech National Bank, Economic Research Department.

Hwang, T., & Gao, S. (2003). The determinants of the demand for life insurance in an emerging economy–the case of China. *Managerial Finance*, *29*(5/6), 82-96.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of financial economics*, *3*(4), 305-360.

Kafková, E., & Kračinovský, M. (2008). Development of commercial insurance business in Slovakia and Hungary in the years 1997-2006. *Ekonomický časopis (Journal of Economics)*, *4*(56), 384-401.

Kazeem, H. (2015). Firm specific characteristics and financial performance of listed insurance firms in Nigeria. *Unpublished M. Sc. Dissertation*.

Kessler, D., Montchatlin, A. d., & Thimann, C. (2016). Insurance and economic development growth, stabilization and distribution: International Labour Organization.

Kripa, D. (2016). Factors affecting the profitability of insurance companies in Albania. *European Journal of Multidisciplinary Studies*, *1*(1), 352-360.

Lee, C.-Y. (2014). The effects of firm specific factors and macroeconomics on profitability of property-liability insurance industry in Taiwan. *Asian Economic and Financial Review*, *4*(5), 681-691.

Lemar, F., & Nekzada, N. (2014). Business development in a growth perspective: Barriers to growth in SMEs.

Lewis, F. D. (1989). Dependents and the demand for life insurance. *The American economic review*, *79*(3), 452-467.

Liedtke, P. M. (2007). What's insurance to a modern economy? *The Geneva Papers on Risk and Insurance-Issues and Practice*, *32*, 211-221.

Malik, H. (2011). Determinants of insurance companies profitability: an analysis of insurance sector of Pakistan. *Academic research international*, *1*(3), 315.

Mayers, D., & Smith Jr, C. W. (1986). Ownership structure and control: The mutualization of stock life insurance companies. *Journal of financial economics*, *16*(1), 73-98.

Mehari, D., & Aemiro, T. (2013). Firm specific Factors that Determine Insurance Companies' performance in Ethiopia. *European scientific journal*, *9*(10).

Meko, M., Lemie, K., & Worku, A. (2019). Determinants of life insurance demand in Ethiopia. *Journal of Economics, Business & Accountancy Ventura*, *21*(3), 293-302.

Mossin, J. (1968). Aspects of rational insurance purchasing. *Journal of political economy*, *76*(4, Part 1), 553-568.

Munir, S., Khan, A., & Jamal, A. (2012). Impacts of Macroeconomic & Demographic Variables on the Demand of Life Insurance: A case study of State Life Insurance Corporation of Pakistan (1973-2010). *Academic Journal of Management Sciences ISSN*, *2305*, 2864.

NBE. (2021). National Bank of Ethiopia Annual Bulletin.

Negash, M., Venugopal, K., & Asmare, S. (2018). Identifying and Analyzing of Factors Contributing for Growth of Non–Life Insurance Gross Premium a Developing Country Perspective: Case of Insurance Industry in Ethiopia. *Journal of Exclusive Management Science*, *7*(01).

Nkwor, N. N., & Ozor, K. C. (2022). MSMEs and insurance consumption gap in Nigeria: An assessment of the impact of regulatory origin and trust. *Journal of Insurance and Financial Management*, *5*(4), 78-100.

Olayungbo, D., & Akinlo, A. (2016). Insurance penetration and economic growth in Africa: Dynamic effects analysis using Bayesian TVP-VAR approach. *Cogent Economics & Finance*, *4*(1), 1150390.

Öner Kaya, E. (2015). The effects of firm-specific factors on the profitability of non-life insurance companies in Turkey. *International Journal of Financial Studies*, *3*(4), 510-529.

Outreville, J. F. (1996). Life insurance markets in developing countries. *Journal of risk and insurance*, 263-278.

Pant, S., & KC, F. B. (2017). Contribution of insurance in economic growth of Nepal. *Journal of Advanced Academic Research*, *4*(1), 99-110.

Pervan, M., & Kramaric, T. P. (2012). Effects of market share and diversification on nonlife insurers' performance. *World Academy of Science, Engineering and Technology*, *61*.

Petkovski, M., & Jordan, K. (2014). An analysis of non-life insurance determinants for selected countries in central and South Eastern Europe: a co-integration approach. *Romanian Journal of Economic Forecasting*, *17*(3), 160-178.

Porat, M. M., Spiegel, U., Yaari, U., & Ben Zion, U. (1991). Market Insurance Versus Self Insurance: The Tax-Differential Treatment and Its Social Cost. *Journal of risk and insurance*, 657-669.

Reshid, S. (2015). Determinants of Insurance Companies Profitability in Ethiopia. *Addis Ababa University Addis Ababa, Ethiopia*.

Sawadogo, R. (2019). Insurance development and international trade in developing countries. *The International Trade Journal*, *33*(3), 239-254.

Sen, S. (2008). *An analysis of life insurance demand determinants for selected Asian Economies and India*: Citeseer.

Seyoum, A. (2017). *Determinants of Non-Life Insurance Premum Growth of Private Insurance Companies in Ethiopia.* St. Mary's University.

Shala, A., Ahmeti, S., Berisha, V., & Perjuci, E. (2014). The factors that determine the capital structure among insurance companies in Kosovo: Empirical Analysis. *Academic Journal of Interdisciplinary Studies*, *3*(2), 43.

Sulaiman, L. A., Migiro, S., & Yeshihareg, T. (2015). Investigating the factors influencing the life insurance market in Ethiopia. *Problems and Perspectives in Management*(13, Iss. 2 (contin.)), 152-160.

Sumaira, B., & Amjad, T. (2013). Determinants of profitability panel data evidence from insurance sector of Pakistan. *Finance Management A*, *57*, 14377-14382.

Szpiro, G. G. (1985). Optimal insurance coverage. *The Journal of Risk and Insurance*, *52*(4), 704-710.

Trinh, C. (2016). *Non-life insurance expenditure in developed and developing economies.* Deakin University.

Webb, I. (2006). Assessment on how strengthening the insurance industry in developing countries contributes to economic growth. *Final Report to USAID*.

Yaari, M. E. (1965). Uncertain lifetime, life insurance, and the theory of the consumer. *The Review of Economic Studies*, *32*(2), 137-150.

Yilma, A. (2014). Determinants of life insurance demand in Ethiopia. *A thesis work in the*

department of Accounting and finance, Addis Ababa University, Addis Ababa.

Zewge, D. (2019). Determinants of insurance business development in Ethiopia. *An Unpublished MSc Dissertation submitted to the Department of Accounting and Finance, College of Business and Economics, Addis Ababa University, Tunisia*.

Zhang, C., & Zhu, N. (2005). Determinants of the development of insurance in China under the globalization: Citeseer.

Zyka, E., & Myftaraj, E. (2014). Factors affecting the insurance sector development: Evidence from Albania. *The Romanian Economic Journal, 51*, 171-188.