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MULTI-FACETED ANALYSIS OF MTPL PRICE LIBERALIZATION IN THE RA: STRATEGIES AND MARKET DYNAMICS

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Abstract: The Mandatory Third Party Liability (MTPL) insurance in Armenia is pivotal in covering damages caused to third parties by insured vehicles, encompassing both material prejudice and bodily injury compensation. Over its thirteen-year implementation, the system has evolved, with significant changes such as the introduction of bonus-malus (BM) components aimed at fairer risk distribution. However, disparities in the BM system have led to considerable uncollected premiums, exacerbating industry losses. To address this, insurers and regulatory bodies have agreed to liberalize premium calculation models, allowing companies to adopt individualized approaches. With the help of quantitative, comparative and financial statement analysis, this study analyzes the effectiveness of these models, assessing market positions, online sales, and premium trends. Results indicate varying strategies among insurers, with implications for risk assessment and portfolio management.
The study underscores the importance of adaptable pricing models in optimizing risk management and profitability in the evolving MTPL landscape. With a firm grasp of the complex interplay between regulatory changes, insurer strategies, and market dynamics, stakeholders can make informed decisions to optimize their competitive positioning and ensure long-term viability in the CMTPL market of Armenia.

Keywords: *insurance pricing, CMTPL, loss ratio, risk factors, bonus-malus*

Introduction:

The Compulsory Motor Third Party Liability (CMTPL) system was introduced in Armenia in 2011 as a unified system, with all six non-state non-life insurance companies operating at that time joining the system. Initially, insurance premium pricing in the system, until April 1, 2023, was unified, with the profit component being almost absent.

However, the absence of a profit component and the unified pricing system led to a decrease in insurance companies' interest in the system. Consequently, insurance companies sought to conclude contracts only with low-risk policyholders, often by offering high commissions to their agency networks.

This practice resulted in unhealthy competition between insurance companies. To address these issues and promote price-quality competition in the system, pricing in the CMTPL system was liberalized on April 1, 2023. Under the new system, each company has the right to develop its own pricing model, subject to approval by the CMTPL Bureau of RA.

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The purpose of this work is to analyze the net loss ratio and other key indicators of insurance companies during the period of pricing liberalization in the insurance system.

The research was conducted using quantitative analysis, comparative analysis and financial statement analysis methods. Quantitative analysis implies gathering numerical data on CMTPL liberalization outcomes in Armenia over the past two years. The collected data included factors such as the number of insurance claims, written premiums, written payouts made, etc. This data was used to calculate the net losses of insurance companies during the liberalization period and a year before the liberalization, which indicates the compliance of the company's liberal model with the actual risk of policyholders. The risk level of policyholders is characterized by many factors, such as the policyholder's age, driving experience, place of residence, permanent or historical driving area, purpose of vehicle use, engine power, etc. These factors can affect the probability of having an accident and the severity of the damage caused. Through the analysis of financial reports, the costs of each company on CMTPL were identified and assessed. This analysis also estimated the combined losses of the companies. The components of combined losses provide insights into the company's policy, such as whether the company prefers to sell through an agency network or online, and whether it offers lower tariffs by reducing system costs. Comparative analysis was used to compare the models of different companies. The aim was to determine whether the simplicity or complexity of the models affects the net loss of the company.

This analysis aims to compare and explain these indicators from the perspective of the new pricing models developed by the insurance companies.

International Experience of CMTPL Free Pricing:

The CMTPL insurance business holds a significant part of the market portfolio in all countries of the Central and Eastern Europe (CEE) region. Even in the most developed ones, CMTPL provides for at least a quarter of the non-life insurance business.

Overall, there has been an increasing trend in CMTPL tariffs in recent years. However, the markets remain very competitive and price-sensitive. This competitive nature is the number one risk factor in liberalizing tariffs, as demonstrated by recent examples in Albania and Croatia. These examples show that insurers tend to capitalize on the freedom to set tariffs to capture a larger market share.

In the CEE region, the status of CMTPL tariffs is as follows:

- Croatia and Albania are two CEE markets that have recently experienced the process of CMTPL market's deregulation.
- In Montenegro, although the change should have been introduced at the end of 2017, the process has been postponed for 4 years, as both the market authority and insurers considered that the local market is not ready to implement the free tariffs.
- In the other countries in the Western Balkans region, outside the EU – Serbia, Bosnia & Herzegovina, Macedonia, Montenegro, Kosovo – CMTPL tariffs are still state controlled; in cooperation with the World Bank, these countries are currently undergoing different stages of the preparations for the MTPL liberalization.
- In the CEE EU member states – except for Croatia, the CMTPL markets were liberalized decades ago, before the year 2000.

Although mandatory in all European countries, CMTPL insurance registers major differences in both rates and coverage across the CEE and CIS markets. Thus, if in countries such as Russia and the Republic of Moldova the CMTPL price is a standard one, regulated through the local legislation, in the member states of the European Union (EU) the price liberalization transformed the CMTPL into one of the main score points of the insurance markets (Doronceanu, 2014).

MTPL in the European Union (EU) has been deregulated fairly recently (mainly over the period 1968–94) and, for this reason, illustrates the steps that are necessary when introducing a free market in the insurance sector. The EU directive regarding the "freedom to provide services and right of establishment" (1988 and following modifications in 1990 and 1992) affirms the principle of freedom to set tariffs in all EU countries. Yet different countries have pursued liberalization at different times and in different ways.

In France, for instance, a very limited regime of control was in place for the approval of MTPL tariffs after the end of World War II. A pure regime of liberalized tariffs has been applied since 1986 (that is, many years before the official date for liberalization imposed by the European directive). In Spain, the freedom to set prices in the insurance sector was established in August 1984 (again, many years before the official date for liberalization). In the United Kingdom, tariffs have not been subject to any type of control for several decades. In Germany, before 1994, tariffs were approved on the basis of the previous year's technical results of marginal companies, with the objective of avoiding their exit from the market. Complete liberalization was achieved, however, only in 1994. Italy was the last major Western European country to move toward a liberalized regime following the EU directive in 1994. Before then, prices were administered by a ministerial committee, and the tariff structure was identical for all companies. The only differentiation between potential buyers was derived by the application of three rating factors: the power of the car's engine, the area of residence, and the application of a bonus-malus scale. The level of loadings on the pure premium that different companies could apply was limited according to the historical trends registered by each company regarding their total general expenses. (Gonulal, 2009).

Where the procedure of introducing the free definition of tariffs for CMTPL insurance premiums was not well designed, the insurance companies and the entire insurance market faced the real perils. In some European countries, in the first phase of liberalization of CMTPL tariffs, there was an actual war of prices and a struggle to attract new policyholders, through too low insurance premiums. Even the most developed European countries, such as Germany, were not immune to such events, partly because the experience and possible consequences of the introduction of free definition of tariffs for CMTPL insurance premiums at that time were modest. The example of Greece is often cited as the worst example of the procedure of introducing the free definition of CMTPL tariffs. In a short period, Greece regulated the CMTPL system in accordance with the guidelines of the former European Community and quickly switched from the government-stipulated tariffs for CMTPL insurance premiums to tariffs completely freely defined by insurance companies. However, in the Greek system, the main problem was not short time allowed to apply the freely defined CMTPL tariffs, but the lack of market discipline and the unwillingness of the supervisory body to react promptly. As a result, during the process of applying the free setting of CMTPL tariffs in Greece, 30 insurance companies went bankrupt, leaving their clients without insurance coverage. Romania also suffered major disruptions in the insurance sector after liberalizing motor liability insurance premiums. After joining the EU, in 2008, the country was allowed to freely form motor liability insurance tariffs. Following the initial growth of insurance premiums in the period 2008-2010, accompanied by high costs of insurance, with a constant very unfavorable combined ratio (up to 135%) (Doganjić, 2020).

Some markets, in the early introduction of liberalization are faced with the problem of invalid low

prices for MTPL, which reduces the solvency of insurers and in such cases; it is necessary to involve the regulator. For example, in Bulgaria when the Commission for Financial Supervision and regulation changed the regulation and lifted the minimum prices, of 60-70€, prices for MTPL fell by 30-40€ (Tomevski, 2012).

An example of the successfully implemented liberalization of motor liability insurance premiums is the liberalization implemented in Hungary. Prior to starting the CMTPL insurance system reform, only one state-owned insurer dealt with this insurance in Hungary and the insurance premium was collected through the price of the purchased fuel. From that period until today, numerous changes have taken place. These changes are reflected in the privatization of insurance, competition strengthening, premium differentiation and selection of insured persons through the bonus-malus system. The system of free definition of premiums has been gradually introduced since 1998. The application of free definition in motor liability insurance tariffs led to the privatization of insurers, setting premiums according to the degree of insured risk but also to the reduction of premiums in the initial phase. However, this system can be attributed to a relatively sluggish implementation, which is understandable because the system with only one state-owned insurer that provided CMTPL insurance services suddenly moved to a market with a large number of insurers competing with each other (Doganjić, 2020).

Analysis:

MTPL is intended to cover damages caused to third parties due to the use of an insured vehicle. The policy covers material prejudice produced to third parties, as well as expenses for the compensation of bodily injury or death.

As a mandatory system in RA, MTPL has promoted the development of other types of non-compulsory insurance, particularly CASCO insurance (Insurebusiness.am, 2024). However, the CMTPL system itself has also evolved during the thirteen years of its implementation. Two years after its introduction, the bonus-malus component was added to the system to ensure a fairer distribution of risks between policyholders who had accidents due to their fault and those who did not.

Initially, the insurance premium for any vehicle in the CMTPL system "depends" on the information about the driver and the vehicle. However, to simplify some factors and avoid fraud in the system, the policyholder eventually replaced the driver in determining the premium. Then the bonus-malus classes were changed in the system, because even at the end of the 2nd year of its operation, the BM system built on the Belgian model, provided more bonuses than malus under CMTPL contracts. For one private company, the uncollected insurance premium due to the BM system was more than 2% (Chitchyan, 2016), and by the end of 2021, according to the representatives of the insurance market participants, the uncollected premium due to the BM disparity in the whole market exceeded 5%. In addition to this circumstance, in December 2021 the net loss of the insurance system was 79% (Armenian Motor Insurers Bureau, 2022) with losses ranging from

69% to 81% for individual companies. In addition to this, insurance companies bear additional expenses, including[1]:

- an average of 10% of the expenses directed to the insurance system (the money allocated to the Bureau's guarantee fund (Armenian Motor Insurers Bureau, 2022) and the ASWA system (ASWA, 2024)),
- an average of 20% insurance operating costs of the company
- 10-15% commission to insurance intermediaries

These factors indicate that insurance companies are experiencing significant losses from the insurance system, with a combined loss exceeding 120%.

This system aims to distribute risks more fairly among policyholders and reduce the uncollected share of insurance premiums. In 2022, there were significant changes to the BM classes and the transition rules between them, which differed significantly from previous systems (Armenian Motor Insurers Bureau, 2022). Under the new rules, transitions between classes depend on the amount of compensation provided due to accidents caused by the policyholder's fault before signing the contract. This system aims to distribute risks more fairly among policyholders and reduce the uncollected share of insurance premiums.

According to decision No. 5-L of January 26 of the Council of the Bureau of Auto Insurers of Armenia, the insurance companies, CMTPL Bureau, and the Central Bank of RA have agreed to liberalize premium calculation models within a year. In this case, each company will build its own model based on its expectations for the system, particularly risk appetite, expected profit, etc. Thus, according to that decision starting from April 1, 2023, all insurance companies signed contracts based on their own pricing models. These models range from simple factor models to those using advanced techniques like machine learning and artificial intelligence. Table 1 provides a brief description of the models offered by insurance companies.

Table 1

Brief description of liberalization models

	Policyholder					**Vehicle**				
Insurance Company Name[2]	Registration Place	Entity Type	Age	Citizenship	Personal Risk	Type	Brand	Power	Sesonality	Other
"NAIRI INSURANCE" LLC (4 risk factors)										
"INGO ARMENIA" CJSC (ML model with 11 risk factors)										**+2**
"SIL INSURANCE" CJSC (7 risk factors)										**+1**
"ARMENIA INSURANCE" LLC (6 risk factors)										**+1**
"LIGA INSURANCE" CJSC (AI model with 132 risk factors)										**+124**
"REGO INSURANCE" CJSC (6 risk factors)										

Source: web pages of insurance companies (21.05.2024), constructed by authors

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[1] The expenses are evaluated from financial statements of insurance companies

[2] In the subsequent Figures the abbreviated names of the insurance companies are used

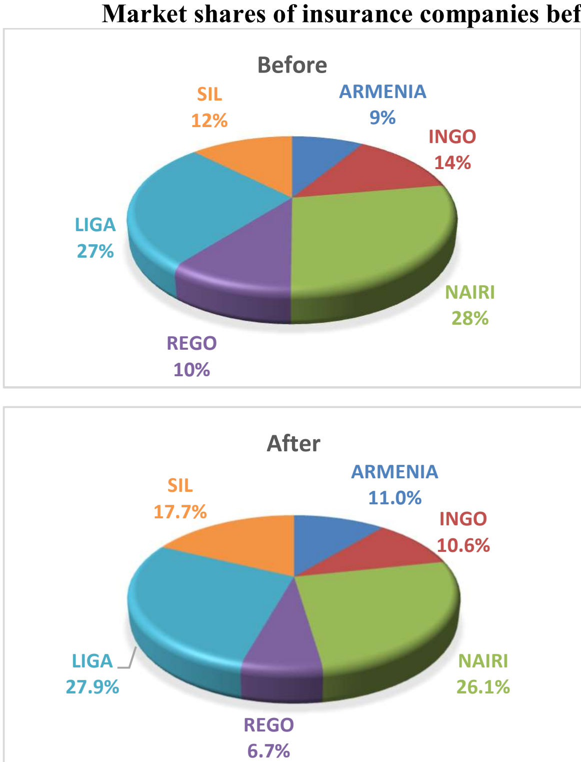
To assess the effectiveness of the models proposed by insurance companies, we analyze the net loss ratios for one year of price liberalization (01.04.2023-31.03.2024) and the preceding year (01.04.2022-31.03.2023). The choice of the analyzed period is due to the fact, that before the liberalization, the insurance premium was consentaneous and all companies offered the same price to policyholders with the same risk. In other words, the firms did not compete on price, and therefore the earlier information would not provide additional information or results for the price liberalization analysis.

To form an opinion on the policies of insurance companies during the period of price liberalization, we compare their market position, level of online sales, and average annual insurance premiums per contract.

Figure 1 shows that before liberalization, the leading insurance companies in the market were "NAIRI INSURANCE" (Nairi Insurance, 2024) and "LIGA INSURANCE" (Liga Insurance, 2024), which maintained their positions even after liberalization. "SIL INSURANCE" (Sil Insurance, 2024) and "ARMENIA INSURANCE" (Armenia Insurance, 2024) each increased their portfolios by 24% and improved their market positions after liberalization, ranking third and fourth, respectively.

Figure 1

Market shares of insurance companies before and after liberalization

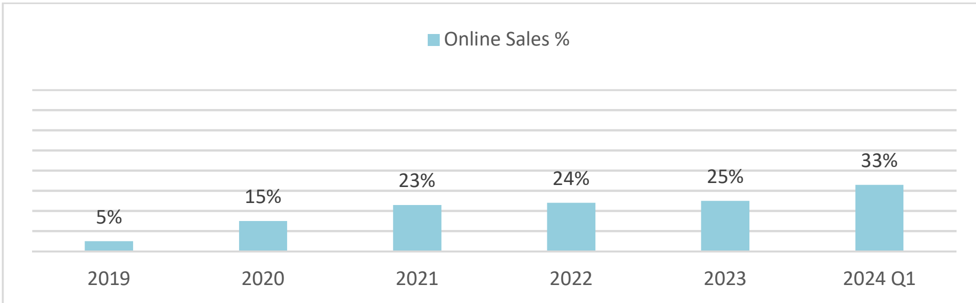


Source: https://appa.am/index.php?al=appa_statistics ***(21.05.2024), constructed by authors***

The liberalization of insurance premiums also led to a significant increase in online sales, as insurance companies promoted online sales with lower premiums. However, as shown in Figure 2, the results did not meet expectations, with online sales accounting for only 25% of the market in 2023, an increase of just 1 percentage point from the previous year. Nevertheless, the sharp 8-percentage-point increase in online sales in the first quarter of 2024 suggests that the public is increasingly preferring online purchase of contracts. This shift is likely due to the ability to obtain the same contract at a lower price, up to 15%.

Figure 2

Share of online sales in the market

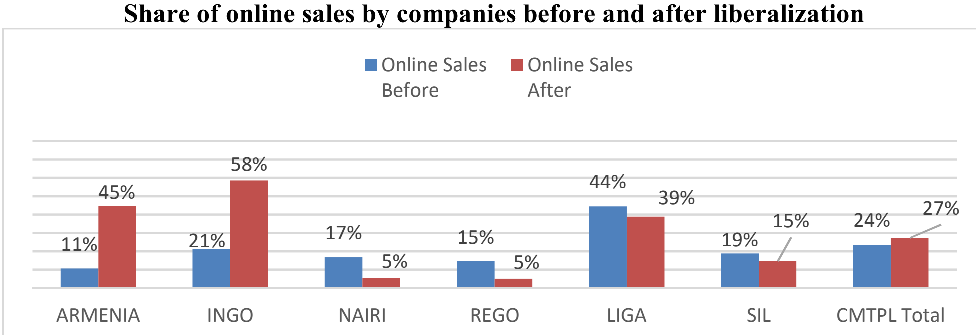


Source: https://appa.am/index.php?al=appa_statistics ***(21.05.2024), constructed by authors***

However, based on Figure 3, it can be inferred that various companies have adopted different strategies for online sales. The offerings from "INGO ARMENIA" (Ingo Armenia, 2024) and "ARMENIA INSURANCE" were more favorable compared to those of other companies for policyholders with similar risks.

Figure 3

Share of online sales by companies before and after liberalization



Source: https://appa.am/index.php?al=appa_statistics ***(21.05.2024), constructed by authors***

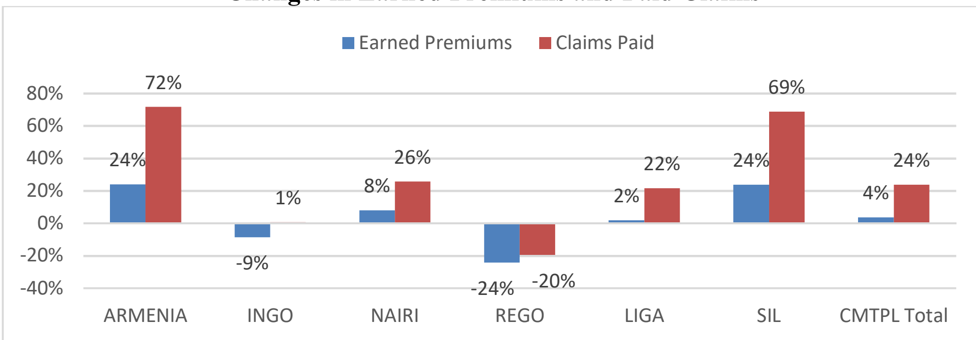
Although Figure 4 shows a 4% increase in premiums earned in the overall market, the average premium per contract in the market decreased by 1.5% (see Figure 5), and the increase in premiums earned is due to the increase in the number of cars in the market. At the same time, while the average compensation per claim increased by 12%, the total claim amount increased by 24%, driven by a nearly 9% increase in the number of claims, relatively more expensive vehicles entering the market and sector inflation.

By comparing the changes in premiums earned and claims paid by companies before and after the liberalization, it becomes apparent that "SIL INSURANCE" and "ARMENIA INSURANCE" have made relatively large claim payments in proportion to the growth of their portfolios (see Figure 4). Additionally, "ARMENIA INSURANCE" has a high level of online sales, indicating that the portfolio may consist of riskier clients.

The company also has the highest average annual premium per contract in the market (Figure 4), further suggesting a riskier portfolio. Therefore, it can be concluded that customers with a high number of malus points are more likely to be insured by these companies.

Figure 4

Changes in Earned Premiums and Paid Claims

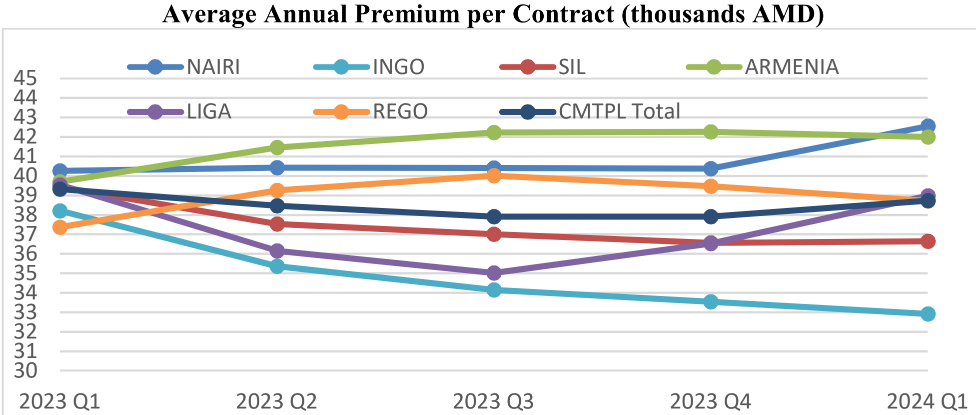


Source: https://appa.am/index.php?al=appa_statistics ***(21.05.2024), constructed by authors***

For "SIL INSURANCE," its below-market-average level of online sales and portfolio growth suggest the accumulation of a low-risk portfolio. This is also evident from its position in the market based on the average annual premium per contract (Figure 5). The substantial growth in paid claims (69%) can be attributed to the company's strategy of creating more attractive conditions for its clients, thereby fostering portfolio growth.

Figure 5

Average Annual Premium per Contract (thousands AMD)



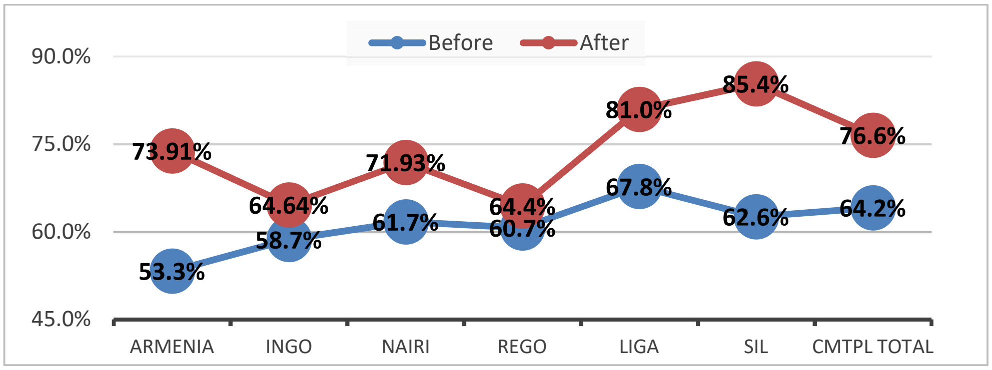
Source: https://appa.am/index.php?al=appa_statistics ***(21.05.2024), constructed by authors***

It's worth noting that the models of "NAIR INSURANCE" and "LIGA INSURANCE" companies are extreme in terms of risk factors (Table 1). However, the overall increase in paid claims in these companies is close to the market growth rate. This suggests that their leading position in the market, rather than the models and/or the level of risks they include, played a significant role.

To complete the analysis of liberalization, we also study the loss ratios of insurance companies before and after the pricing liberalization.

Figure 6

Loss ratios before and after liberalization



Source: https://appa.am/index.php?al=appa_statistics ***(21.05.2024), calculated and constructed by authors***

Considering that the pricing models of "SIL INSURANCE," "ARMENIA INSURANCE," and "REGO INSURANCE" (Rego Insurance, 2024) are based on almost the same factors, the loss ratios indicate that "REGO INSURANCE" evaluates risks more appropriately in its model compared to "SIL INSURANCE" and "ARMENIA INSURANCE."

On the other hand, the low level of online sales at "REGO INSURANCE" prevented the inclusion of many random risks in its portfolio, contributing to its low loss ratio. In contrast, "INGO ARMENIA" had the highest online underwriting rate but a similar loss ratio to "REGO INSURANCE." Additionally, "INGO ARMENIA" has the lowest average annual insurance premium per contract, suggesting that it has been able to attract a low-risk portfolio, with policyholders with high bonuses choosing "INGO ARMENIA" during online contract purchases.

From Figure 5, it's evident that there was a policy change in "NAIRI INSURANCE" and "LIGA INSURANCE" regarding insurance premiums, resulting in a 5.4% and 6.7% increase, respectively, in the average annual premium per contract. While the growth of claims in these companies corresponds to the overall market trend, the average annual premium per policy of "LIGA INSURANCE" has consistently been lower than that of "NAIRI INSURANCE" throughout the liberalization period. This difference has contributed to a greater increase in the loss ratio of "LIGA INSURANCE.

Conclusions:

The decision to liberalize premium calculation models represents a significant paradigm shift in the Armenian insurance sector, empowering insurers to adopt individualized approaches tailored to their risk appetites and profitability objectives. However, the analysis highlights that even models based on artificial intelligence do not guarantee the most accurate assessment of risks. This underscores the importance of ongoing refinement and validation of pricing models to ensure effective risk management.

Moreover, the findings emphasize that a high percentage of online signings does not necessarily hinder achieving a low level of loss ratio, provided that risk factors are well-estimated. This underscores the importance of accurate risk assessment in optimizing portfolio performance and profitability.

Companies can follow trends and take a more rigorous approach when building models. The choice of risk factors and the evaluation of their impact should be made in more detail, in accordance with the real risks, using international experience. We suggest companies analyze the indicators obtained after liberalization based on the most detailed information available to them, make appropriate conclusions, introduce new statistically significant factors or remove from the model those factors that do not have a significant impact on the insurance premium.

With proper risk assessment, insurance companies can promote online sales by reducing commission costs. Along with the growth of online sales, some other administrative costs will also decrease, which can provide companies with profits and contribute to lower insurance premiums in the long run.

Moving forward, regulatory bodies and insurers must collaborate closely to monitor market dynamics, address emerging challenges, and foster a conducive environment for sustainable growth. Initiatives aimed at promoting transparency, consumer education, and market integrity will be instrumental in building trust and confidence among stakeholders.

Overall, the analysis offers valuable insights for insurers, regulatory authorities, and other industry stakeholders seeking to navigate the complexities of the CMTPL market in Armenia. By understanding the underlying trends and dynamics shaping the market, stakeholders can make informed decisions and contribute to the advancement of the insurance sector in Armenia.

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