

## FINANCIAL IMPLICATIONS OF PRICE DISPARITIES IN MOTOR INSURANCE: A CROSS-NATIONAL ANALYSIS OF UKRAINE AND THE EU

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**Abstract.** Price disparities in motor insurance create financial inequality and hinder the effective performance of insurance, undermining its social function. The harmonization of insurance standards with EU regulations has changed the pricing systems, intensifying the rapid rise in policy costs in Ukraine. The article aims to analyze the financial implications of price disparities in motor third-party liability insurance (MTPL) by developing original indicators of economic pressure on Ukrainian households and conducting a cross-national comparison with European Union markets to substantiate strategies for harmonizing insurance policies. The empirical analysis covers 2021–2024 and applies statistical, comparative, and economic-mathematical methods. The study justifies the need to assess consumers' financial capacity and proposes the use of the Insurance Burden Ratio on Wages and the MTPL Insurance Affordability Index, reflecting an original approach that accounts for income levels, vehicle fleet age, and policy costs. The scientific novelty lies in the quantitative assessment of price disparities in motor insurance using these developed indicators. The findings reveal that the rising cost of insurance policies in Ukraine imposes an excessive financial burden on households. In contrast, the European Union's motor insurance market exhibits significantly lower price disparities, with economic conditions ensuring greater insurance affordability. The practical significance of the study lies in the potential for state regulators and insurers to utilize the proposed indicators to refine tariff policies and align them with European standards, thereby fostering a socially efficient, accessible insurance market that supports the achievement of the United Nations Sustainable Development Goals.

**Keywords:** insurance market, insurance, motor insurance, insurance affordability, MTPL Insurance Affordability Index, Insurance Burden Ratio on Wages, price disparities.

**JEL Classification:** G22, D14, F36, R11

### 1. INTRODUCTION

Insurance, both in general and within its specific branches, is intended to serve not only economic, investment, and risk-related functions. An equally important role of insurance as an economic institution lies in providing social protection. Evidently, the cost of delivering such protection depends on a range of factors. Economic agents pay for and purchase coverage against potential insured events. In a market economy, insurance operates within the framework of the market, where, as expected under market relations, the laws of supply and demand prevail. At the same time, the economic essence of insurance – including its social dimension – must not be disregarded. Otherwise, the interests of insurers

and the welfare of insurance business owners become dominant, leading to a distortion of the insurance market's function and the erosion of policyholders' interests. Moreover, in the context of advancing the United Nations Sustainable Development Goals (SDGs), inequitable pricing in the insurance market undermines the principles of inclusiveness and generates unequal access to insurance protection.

The factors influencing the pricing of insurance services are quite diverse and may include: demand, the pricing system across different types of insurance, the insurer's risk policy, regulatory requirements, including the specifics of forming and managing reserves, the entrepreneurial demands of owners, macroeconomic conditions, and much more. However, for compulsory types of insurance, some of the price-forming aspects immediately fall away, as insurers, fully aware of the legally mandated necessity to purchase insurance services, gain more tools and opportunities to manage the prices of such services. The Ukrainian insurance market, going through crisis times, is focused on compulsory types of insurance. It is precisely due to compulsory insurance that the demand for insurers' services remains, allowing many companies to stay in the market. Parallel to the move towards European economic integration, Ukraine seeks to implement existing standards into its own economic system. The insurance market is no exception. The mismatch with existing global insurance principles and standards has long been discussed. However, the financial readiness of Ukraine's insurance market remains questionable. Clearly, the tightening of regulatory requirements leads to economic disparities in household finances, first and foremost. This, in turn, provokes the violation of the social nature of insurance as a protective mechanism. The practice of identifying economic disparities can be explained through the pricing aspects of the motor insurance market in Ukraine and European Union countries.

In the context of well-known economic theories, the study of specific aspects of price disparities in motor insurance and their impact on household finances gains new significance. In particular, during a crisis period of geopolitical and economic instability, the implementation of European insurance legislation may have negative economic consequences for household finances. Standards that work effectively in European countries may be "harmful" to countries with significantly lower living standards and income levels. The reasons for this phenomenon are explained by the Uneven Development Theory, as countries with different levels of economic development cannot equally effectively implement regulatory policies for the insurance market (Wallerstein, 1974; Krugman, 1991).

The level of financial literacy among the population of Ukraine and trust in insurance companies are significantly different between Ukraine and the EU. At the same time, these factors are integral attributes of the development of insurance culture and the insurance market as a whole. This is confirmed by the Institutional Theory, which asserts that economic efficiency depends not only on formal rules but also on informal institutions, including the level of trust in society (North, 1990). In this regard, attention should be paid to the public's unpreparedness for a sharp rise in insurance prices, which could ultimately have a negative impact on trust in insurance as an institution and lead to a decrease in demand for insurance services.

The issue of harmonizing regulatory requirements and EU standards is not unique to Ukraine. Harmonizing national motor insurance regulations with European directives, as noted by Marson et al. (2021), can pose significant challenges for countries with limited household financial capacities, which highlights doubts about Ukraine's readiness to implement such norms without considering its economic context.

In their study of the Polish motor insurance market, researchers (Frej & Hupka, 2025) noted that the unified regulatory requirements for insurance companies within the EU are determined by the free movement of vehicles across national borders. It is important to emphasize that, in Ukraine, during the period of martial law, the movement of motor vehicles beyond the country's borders is highly restricted, as most categories of men and some categories of women are prohibited from leaving the country. At the very least, this fact points to the lack of necessity for establishing a unified regulatory framework for the insurance market under the current emergency conditions. At the same time, researchers highlight that the motor liability insurance market in Poland is a key component of the country's insurance sector.

Insurance companies play a vital role in the economy, acting as significant investors in Polish enterprises and stabilizing the economy. In Ukraine, the insurance market does not play such a significant role.

The wide variety of factors that directly or indirectly influence the pricing policy of insurers and the cost of motor insurance services (including liability insurance) is the focus of many scientific studies. Income level, as a price-forming factor, is no exception. In particular, the study by Mare et al. (2023) highlights the income of citizens as a key factor in motor insurance. Even the level of road risk is not statistically significant. A study conducted on data from 31 European countries shows that income, measured as GDP per capita, has a much greater impact on demand for motor insurance than the number of road fatalities. In countries with lower income levels, such as Ukraine, the limited purchasing power of the population creates barriers to the development of the insurance market, which is especially noticeable in Eastern European countries compared to more developed Western ones. An increase in the cost of motor insurance under these conditions could further limit the accessibility of insurance services, as demand for them depends on citizens' financial capacity.

An additional argument against raising motor insurance prices in Ukraine is the experience of other countries with similar economic conditions, particularly Latvia, where the increase in insurance payouts, coupled with reduced premiums, creates pressure on the insurance market, as highlighted by Spilbergs et al. (2022). The study shows that the amount of payouts primarily depends on driver behavior, including penalty points and Bonus-Malus classes, as well as the characteristics of the vehicles, such as their weight and age. In Ukraine, where a significant portion of the population owns older vehicles due to low income levels, price increases may disproportionately affect this group, reducing the number of insured drivers.

The article aims to examine the financial implications of price disparities in motor third-party liability insurance (MTPL) through the development of original indicators of economic pressure on Ukrainian households and their cross-national comparison with EU markets to justify strategies for harmonizing insurance policies. Based on the formulated goal, the main objectives included: analyzing the role of MTPL in the structure of insurance activities in Ukraine, assessing the impact of premium increases on household welfare, and comparing the economic accessibility of insurance with the EU market using original indicators.

The scientific novelty of the research lies in the development of original economic and mathematical indicators – The Insurance Burden Ratio on Wage and the MTPL Insurance Affordability Index – which allow for the quantitative assessment of the financial impact of price disparities in motor insurance on the welfare of Ukrainian households. The uniqueness of the work is also ensured by the cross-national comparison of the economic accessibility of MTPL between Ukraine and EU countries – taking into account the age of the vehicle fleet and regulatory changes – which is applied for the first time in this context. The proposed approach contributes to the improvement of the methodology for analyzing insurance markets and justifying strategies for harmonizing insurance policies in the context of European integration.

## **2. RESEARCH METHODS**

A comprehensive empirical analysis was conducted to study the financial implications of price disparities in motor insurance in Ukraine and the EU, using statistical, analytical, and comparative methods. The research was carried out in four stages. The first stage involved the collection and analysis of statistical data characterizing the share of MTPL in the structure of insurance activities in Ukraine for the years 2021-2024, including insurance premiums, insurance payouts, the number of contracts concluded, and the number of claims settled. Additionally, data on average wages, unemployment rates, and household expenditures on purchasing MTPL policies were gathered. The second stage focused on outlining the principles of regulatory and legal regulation of the MTPL market, including the implementation of EU standards. The third stage justified the need to deepen the assessment of the

impact of policy costs on household welfare, specifically through the use of the insurance burden ratio on wage, which reflects the share of expenses for purchasing a policy in both the average and minimum wages, and the MTPL insurance affordability index, which takes into account not only policy costs but also the age of the vehicle fleet. In the final stage, the MTPL insurance affordability index and the insurance burden ratio on wages were calculated and compared for the overall EU market and for individual countries. The presence of excessive financial burden on households, caused by the increase in the cost of motor insurance due to regulatory changes, was justified, as well as the preparedness for their implementation.

The empirical base of the research included: statistical data for Ukraine (data from the National Bank of Ukraine, the State Statistics Service of Ukraine, the Motor (Transport) Insurance Bureau of Ukraine, private research agencies); data from EU countries (reports from the European Insurance Association, national regulators of Poland and Germany, private analytical online platforms). Due to the absence of a unified database, a sampling approach was used. Data for the EU market were aggregated based on reports from Insurance Europe. Due to the fragmentary nature of the European data, the results for the EU are of an evaluative nature, which was taken into account in the interpretation.

The research methods include: statistical analysis (descriptive statistics methods and their comparison), comparative analysis (comparison of motor insurance accessibility indicators), econometric modeling (for the development of original formulas for calculating the insurance burden ratio on wages and the MTPL insurance affordability index), and content analysis (for systematizing changes in legislation and the regulation of the MTPL market).

The choice of methods is determined by the research objective, which is based on secondary data. Primary data were not collected, as the goal of the study was to analyze existing information. Calculations were performed using Microsoft Excel software.

### 3. RESULTS AND DISCUSSION

Although the provision of insurance services occurs within the insurance market, the operation of market laws should be reinforced by regulatory requirements and rules. In this field of activity, a societal demand for services is formed, which is expressed through demand, while insurers carry out activities aimed at meeting these needs and providing supply. At the same time, competition influences the price of insurance services, contributing to the quality satisfaction of demand. Considering the increased danger of road traffic in Ukraine and the high accident rate, the importance of the social function of motor insurance is undeniable (Verheliuk, 2018).

The analysis of price disparities in the compulsory motor insurance (MTPL) sector reveals barriers to financial accessibility that limit household participation in the insurance system. Target 8.10 of the SDGs, which aims to strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance, and financial services for all, is undermined when demand for motor insurance is constrained by high costs and low incomes among certain population groups. Similarly, such price disparities contribute to social inequality in access to financial protection, particularly among lower-income households, which runs counter to Target 10.2 of the SDGs to empower and promote the social, economic, and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion, or economic or other status (United Nations Development Programme, 2015). Consequently, the identification and quantitative assessment of price disparities in the insurance pricing system are essential prerequisites for developing equitable tariff policies, enhancing financial inclusion, and aligning the insurance environment with sustainable development principles.

The core of insurance services for individuals – owners of motor vehicles – comprises services related to civil liability insurance for owners of ground vehicles, as well as vehicle insurance (CASCO). Civil liability insurance for owners of ground vehicles (MTPL) is the mandatory type of insurance that accounts for a significant share of the insurance services provided in Ukraine. In 2024, the regulatory

framework for MTPL underwent significant changes. A new law came into effect, regulating the legal relations in this area (Law of Ukraine on Mandatory Civil Liability Insurance of Owners of Ground Vehicles, 2024). The adoption of this law in Ukraine was aimed at gradually implementing the requirements of Directive 2009/103/EC of the European Parliament and of the Council on insurance against civil liability in respect of the use of motor vehicles and the enforcement of the obligation to insure against such liability. The mentioned Law of Ukraine includes several innovations, which, according to representatives of the state regulator, will contribute to the introduction of a qualitatively new model of market regulation, taking into account the interests of policyholders and injured parties, and will increase trust in such insurance (National Bank of Ukraine, n.d.).

With the entry into force of the new law, the market for motor third-party liability insurance in Ukraine is acquiring new regulatory features concerning:

- enhancement of insurance coverage standards – gradual increase of compensation limits to EU levels, introduction of annuity payments in cases of serious injury or death, and compensation without considering vehicle depreciation;

- European approaches to pricing – implementation of personalized tariffs based on the insurer's history and transition to electronic contracts through a unified database;

- improvement of service and claims settlement – direct settlement of road traffic accidents and removal of compensation limits when using the European accident report form;

- reform of MTIBU governance – renewal of management bodies, introduction of transparent oversight, and establishment of an effective supervisory system.

The state regulator, represented by the National Bank of Ukraine, substantiates several evident positive changes expected in the market with the introduction of new regulatory rules. Particularly relevant to this study is the provision concerning free pricing for insurers. Insurance companies gain the ability to independently set prices based on the level of risk, which is intended to promote fair competition in the market. However, a critical question arises as to whether entrepreneurial interests align with the payment capacity of potential and existing consumers of insurance services. While the reform claims to bring a new quality of insurance services, a rise in their cost appears inevitable.

Across the world, the market for motor third-party liability insurance is growing and evolving. In Europe, a positive development trend has been observed in recent years, and the forecast for 2025–2030 (Mordor Intelligence, n.d.) indicates even greater market expansion. In Ukraine, the situation is the opposite: only in 2023 did the insurance market show some signs of revival. According to Ukrainian scholars, expanding the scope of insurance in the domestic market can be achieved by increasing the number of policyholders and the volume of services provided. However, declining solvency among the population and businesses negatively affects these processes. Significantly higher insurance activity is observed in countries with higher income levels (Kolinets et al., 2023).

Despite the stagnation of Ukraine's insurance market during 2022–2024, the indicators characterizing MTPL services (Motor Third-Party Liability insurance) show a positive trend throughout the entire period, except 2022 (Table 1). The MTPL insurance market is further reinforced by the high accident rate on Ukrainian roads. Researchers emphasize that road accident statistics in Ukraine demonstrate significant growth. This trend highlights the relevance of MTPL as a mechanism for protecting both victims and liable parties (Savina et al., 2024). Gross insurance premiums, net earned premiums, and net claims paid decreased in 2022 compared to the previous period. However, their growth rates turned positive again starting from 2023.

Motor insurance occupies a leading position in global insurance markets, second only to long-term life insurance in terms of premiums (Abernikhina, 2024). In Ukraine, motor insurance is represented by both mandatory and voluntary forms, which belong to the category of risk insurance. Among the mandatory forms, it is important to highlight compulsory civil liability insurance for owners of motor vehicles.

*Dynamics of key indicators of Motor Third-Party Liability (MTPL) insurance in Ukrainian insurance companies, 2021–2024*

<b>Indicators / Years</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>
Gross insurance premiums, UAH million	6904,2	6848,5	8541,8	10720,8
Growth rate, %	-	99,2	124,7	125,5
Net insurance premiums, UAH million	6835,2	6832,4	8526,1	8498,1
Growth rate, %	-	83,8	119,5	105,5
Net insurance payments, UAH million	3520,3	2779,2	3807,0	4689,2
Growth rate, %	-	72,5	130,6	124,6
Number of contracts concluded	9022245	7182329	7668851	8098774
Number of settled claims	173436	110625	127837	142110
Number of contracts with unfulfilled obligations	0	2	0	30

*Source: compiled by the authors based on data from the National Bank of Ukraine [NBU] (n.d.) and Motor (Transport) Insurance Bureau of Ukraine [MTIBU] (n.d.)*

Additionally, a significant place in motor insurance is occupied by comprehensive car insurance (CASCO). However, the latter is not mandatory. This is evidenced by the high share of collected premiums, net premiums, and claims payouts for compulsory civil liability insurance in the portfolios of insurance companies. The dynamics of these indicators in 2021-2024 are depicted in the diagram (Figure 1). About 20% of the portfolios of Ukrainian insurance companies consist of compulsory civil liability insurance, indicating the inelasticity of demand for such insurance services. The key factor here is the mandatory nature of this insurance. Based on the above, it can be stated that compulsory civil liability insurance for motor vehicle owners is a system-forming type of insurance that forms the foundation of the Ukrainian insurance market, especially during crises. At the same time, the processes of implementing European standards have led to a significant increase in the cost of compulsory civil liability insurance services.

Despite the growth of indicators describing the dynamics of motor insurance services in Ukraine, scholars highlight factors that hinder the development of this market. Among them, the following stand out: high premiums and the inaccessibility of services, as well as regulatory barriers – the instability of legislation and regulatory frameworks, which may create uncertainty for insurance companies (Abernikhina, 2024). Before the updated Law of Ukraine on compulsory insurance of civil liability of vehicle owners came into effect, the factors influencing the tariff policy for compulsory civil liability insurance included: the amount of coverage, the deductible, the territory of coverage, the age and driving experience of the driver, the condition of the vehicle, and other factors. After the changes were implemented, the tariff policy has significantly changed, leading to an increase in the cost of insurance services. Deductibles, which previously served as a tool to manage price demand and reduce the insurer's risks, significantly lowered the cost of the policy. Today, however, deductibles are no longer

used in compulsory civil liability insurance contracts. Moreover, it is important to note that the increase in premiums is also due to higher risks and restrictions in insurance policies for regions with higher danger levels. In standard insurance policies, damages related to military events are excluded from the list of covered incidents. However, some companies have begun offering additional services or specialized products for such cases (Kostohryz & Hariaha, 2025).

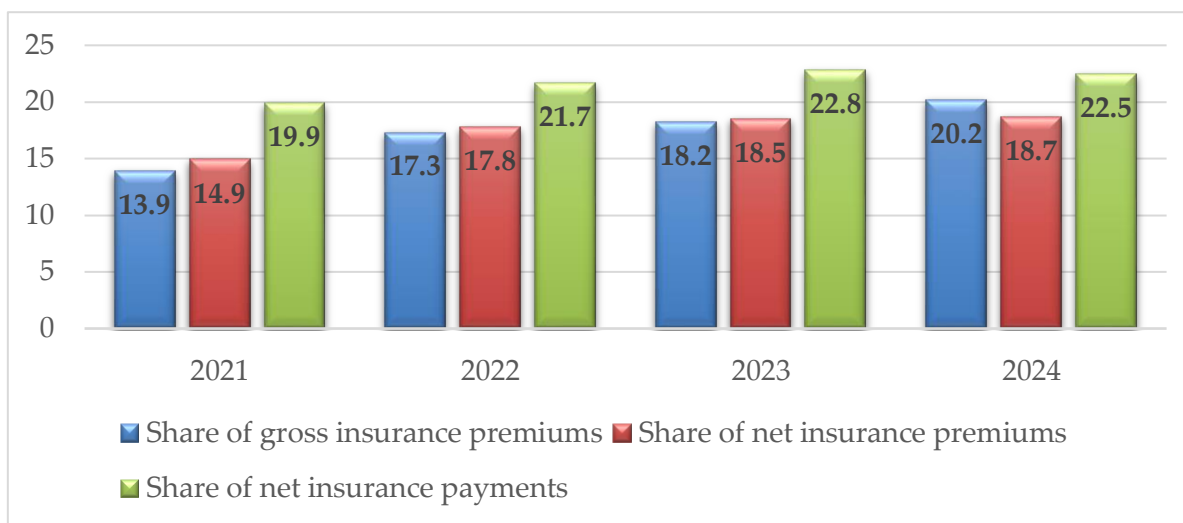


Fig. 1. Share of MTPL indicators in the total indicators of insurance companies in 2021–2024, %  
Source: Calculated by the authors

The direct factors that led to the increase in the cost of MTPL (Compulsory Third-Party Liability Insurance) policies in Ukraine due to the new regulatory rules include:

- gradual increase in insurance payouts – the planned alignment of these payouts to the levels applied in European Union countries;

- Introduction of free pricing – insurers are allowed to set individual tariffs for each client and product;

- abolition of the deductible – the deductible is no longer applied in compulsory third-party liability insurance (MTPL) contracts;

- new rules for preferential categories – a 50% discount is provided for one MTPL policy for all beneficiaries, and the Cabinet of Ministers has the right to expand this list;

- change in the approach to payments – insurance compensation is made without taking depreciation into account and can be directed directly to the repair service;

- cancellation of the limit for the European Protocol – the 80,000 UAH limit for simplified accident registration no longer applies;

- strengthening police control – checking the presence of MTPL policies is carried out during road inspections, including automatic recording, accident registration, and other violations of traffic rules.

It's clear that, in the context of an ongoing geopolitical crisis, the economic situation of households has significantly worsened. The financial condition of households can be described using various statistical indicators and assessments. Important factors include: the minimum wage, the average wage, the unemployment rate, the poverty rate, household consumption expenditures, the volume of household savings, the debt-to-income ratio, the consumer confidence index, the share of expenditures on food products, the level of subsidies for utility services, and others. However, assessing individual indicators is complicated by the fact that, since 2022, the State Statistics Service has not published data on demographic and social statistics.

Ukrainian scholars highlight the challenges of readiness for the implementation and adaptation of regulatory requirements in the context of the Solvency II Directive (European Parliament and Council of the European Union, 2009). On one hand, ensuring the financial stability of participants in the insurance

market is extremely relevant for Ukraine, while on the other hand, the requirements of Solvency II are significantly stricter compared to the current Ukrainian practice. For example, countries such as the Netherlands, the United Kingdom, and the Scandinavian states were relatively better prepared for the implementation of this directive. Meanwhile, Southern European countries, such as Greece and Portugal, demonstrated a much lower level of readiness (Krushynska & Samaricheva, 2023). The conditions for the introduction of mandatory insurance for civil liability of vehicle owners are the establishment of reasonable tariffs. These tariffs should both protect the financial stability of insurance companies and take into account the economic condition of society (Goliadze, 2019).

In this context, the concept of economic disproportion in car insurance for households – the primary policyholders in the mandatory civil liability insurance segment in Ukraine – becomes relevant. Changes in regulatory requirements regarding the implementation of European standards must take into account the real financial situation of households operating under conditions of war, income decline, property losses, high inflation, and weakened purchasing power. Ignoring these circumstances could deepen economic inequality and reduce insurance coverage, which contradicts the goals of the reforms. The data in Table 2 contains the dynamics of indicators characterizing the cost of car insurance against the background of household income, as well as the average age of vehicles in Ukraine, the European Union as a whole, and specific EU countries, including Germany and Poland. Despite the positive dynamics of average monthly wages and the minimum wage, as well as the decline in unemployment in Ukraine, a significant increase in the cost of mandatory civil liability insurance policies has already been observed in 2025.

Tab. 2

*Dynamics of indicators of car insurance costs, household incomes, and the average age of the vehicle fleet in Ukraine and the EU in 2021–2025*

Indicators / Years	2021	2022	2023	2024	2025
Average monthly salary, UAH	12993,6	13376,2	14308,5	17486,4	18589,4
Minimum salary, UAH	6000	6500	6700	8000	8000
Average cost of the MTPL policy, UAH	618	976	1141	1361	2 975
Average age of vehicles (total fleet), years	22,7	23,2	23,2	19,6	15,8
Unemployment rate, %	10,3	18,5	17,4	14,3	12,1
<b>EU (Overall)</b>					
Average monthly salary, EUR	2792	2967	3158	3325	3382
Average cost of the MTPL policy, EUR	150	200	250	300	320
Average age of vehicles (total fleet), years	9,8	9,3	12,5	13,6	12,5
<b>By EU countries</b>					
<b>Germany</b>					
Average monthly salary, EUR	2600	2750	2900	3000	3100
Average age of vehicles (total fleet), years	9,6	9,8	10	10,2	10,4

Average cost of the MTPL policy, EUR	300	320	350	370	400
Poland					
Average monthly salary, EUR	1050	1100	1200	1300	1350
Average age of vehicles (total fleet), years	14,1	14,3	14,5	14,7	14,9
Average cost of the MTPL policy, EUR	120	130	150	160	170

Source: calculated by the authors based on Pension Fund of Ukraine (n.d.); Minfin Analytical Portal (n.d.); Polis.ua (n.d.); Institute of Automotive Market Research (n.d.); Info Sapiens (n.d.); European Environment Agency (n.d.); Statista (n.d.); Marsh McLennan (2025); Insurance Europe (n.d.)

To assess the financial readiness of households in Ukraine, the above-mentioned indicators should be considered. To characterize the financial burden on households arising from the need to purchase MTPL policies, it is suggested to use the following indicators: the insurance burden ratio on the average monthly wage, the insurance burden ratio on the minimum wage, and the insurance accessibility index for MTPL policies. The first and second indicators take into account the average cost of the policy and the average monthly wage or minimum wage. Their calculation is carried out using the following formula:

$$S=(P/Z)\times 100\% \quad (1)$$

where:

P – average cost of an MTPL policy,

Z – average monthly salary

S – Insurance Burden Ratio on Wages, %

This indicator shows what portion of an individual's wage is spent on purchasing a Motor Third Party Liability (MTPL) insurance policy. Considering that a significant share of Ukrainians receive the minimum wage, the indicator is also calculated in relation to the minimum wage (Insurance Burden Ratio on the Minimum Wage).

Referring to the conclusions of the World Bank, financial services should be accessible to households with medium and low income levels, as high costs may render certain types of services unaffordable for vulnerable population groups. Excessive regulatory pressure or high financial requirements restrict access to financial services for vulnerable segments of the population (World Bank Group, 2020). In this context, it should be noted that the acceptable value of the indicator (S) ranges from 5–7%. This level of expenditure on non-basic services does not create excessive financial pressure on households. The upper limit of 10% is considered critical, as it limits the accessibility of insurance and contradicts its social role and the principles of financial inclusion.

Under the current conditions of full-scale war in Ukraine, a significant portion of the population has experienced a decline in income, loss of property, and increased economic vulnerability. Many households now face a situation where purchasing power has significantly decreased, while spending on basic needs has increased. In this context, the average age of privately owned vehicles becomes an important socio-economic indicator: according to available statistics, it exceeds 15 years. This not only indicates the aging of the vehicle fleet but also highlights the limited resources available for the technical renewal of household assets. Taking into account the average age of vehicles when calculating the MTPL insurance affordability index allows for a more accurate reflection of the financial burden on vehicle owners during wartime and provides a realistic picture of the accessibility of mandatory motor third-party liability insurance for Ukrainian citizens. Therefore, it is reasonable to integrate the average vehicle age into the insurance burden ratio on wages. The resulting metric takes on a new meaning and

is referred to as the “MTPL Insurance Affordability Index”. The formula for calculating this indicator is as follows:

$$I_d = (P/Z) \cdot (1 + A/100) \cdot 100\% \quad (2)$$

where:

$I_d$  – MTPL Insurance Affordability Index;

$P$  – Average cost of the MTPL policy;

$Z$  – Average monthly salary;

$A$  – Average age of vehicles, years

The modified formula for calculating the MTPL Insurance Affordability Index ( $I_d$ ) is based on the Insurance Burden Ratio on Wages ( $S$ ), for which the acceptable range has been determined to be between 5–7%, with a critical threshold of 10%. At the same time, the index ( $I_d$ ) also takes into account an important factor – the average age of vehicles. An older vehicle fleet increases the value of ( $I_d$ ), as older cars are associated with higher insurance risks, which impacts policy costs. On average, the adjustment multiplier for vehicle age in Ukraine is 1.2 (or 20%), while in the EU it is closer to 1.1 (or 10%). Therefore, an acceptable range for the MTPL insurance affordability index ( $I_d$ ) is considered to be 6–8.4%, with an upper limit of 12%.

Table 3 presents the results of calculations for the insurance burden ratio on wages and minimum monthly wage in Ukraine, as well as the MTPL insurance affordability index using the example of Ukraine and the EU.

Tab. 3

Calculation of the Insurance Burden Ratio on wages and minimum monthly wage in Ukraine, and the MTPL insurance affordability index in Ukraine and the EU, %

Indicators / Years	2021	2022	2023	2024	2025
Insurance burden ratio on wage, %	4,8	7,3	8	7,8	16,0
Insurance burden ratio on minimum wage, %	10,3	15,0	17,0	17,0	37,2
$I_d$ Ukraine, %	6	9	10	10	18
$I_d$ EU, %	5,9	7,3	9,0	10,2	10,1
$I_d$ Germany, %	12,6	9,3	13,3	13,9	14,5
$I_d$ Poland, %	13,0	13,5	14,3	14,1	14,5

Source: calculated by the authors

The insurance burden ratios on wage and minimum wage in 2021–2025 show a steady increase, indicating growing financial pressure on households due to rising costs of motor third-party liability insurance services. With the implementation of new regulatory rules in 2025, there is a sharp increase in the ratios (up to 16% and 37.2%, respectively). For average households, allocating 16% of their income to insurance represents a significant share that could otherwise be spent on basic needs such as food, housing, or education. For families with minimum incomes, the situation is even more critical: spending 37.2% of the minimum wage on MTPL insurance makes sound financial planning nearly impossible and increases the risk of poverty.

Such high figures indicate economic disparities in motor insurance: due to stricter regulatory requirements and rising prices for MTPL policies, households are forced to spend a disproportionately large share of their income, disrupting the balance between the cost of insurance and the population’s actual financial capacity. This issue is particularly critical for vulnerable groups with minimum incomes, for whom insurance becomes an unaffordable burden. The rapid increase in MTPL costs contradicts the social role of insurance, which is to provide protection and financial stability for all segments of the population, rather than only for those with higher incomes.

The EU countries, compared to Ukraine, have different starting economic conditions for pricing in the insurance sector in general and motor insurance in particular. The MTPL insurance affordability index (*Id*), the calculation of which is provided above (Table 3), takes into account the cost of MTPL insurance policies for the EU and MTPL policies for Ukraine. The results are plotted in the chart, visualizing the dynamics of the indicators in 2021-2025 (Figure 2).

The value of the indicator (*Id*) during the analyzed period exceeds the established critical threshold of 12% in 2025. This indicates economic disparities and limits the affordability of MTPL insurance in Ukraine. The indicator level of 18% is the highest value for all periods and regions.

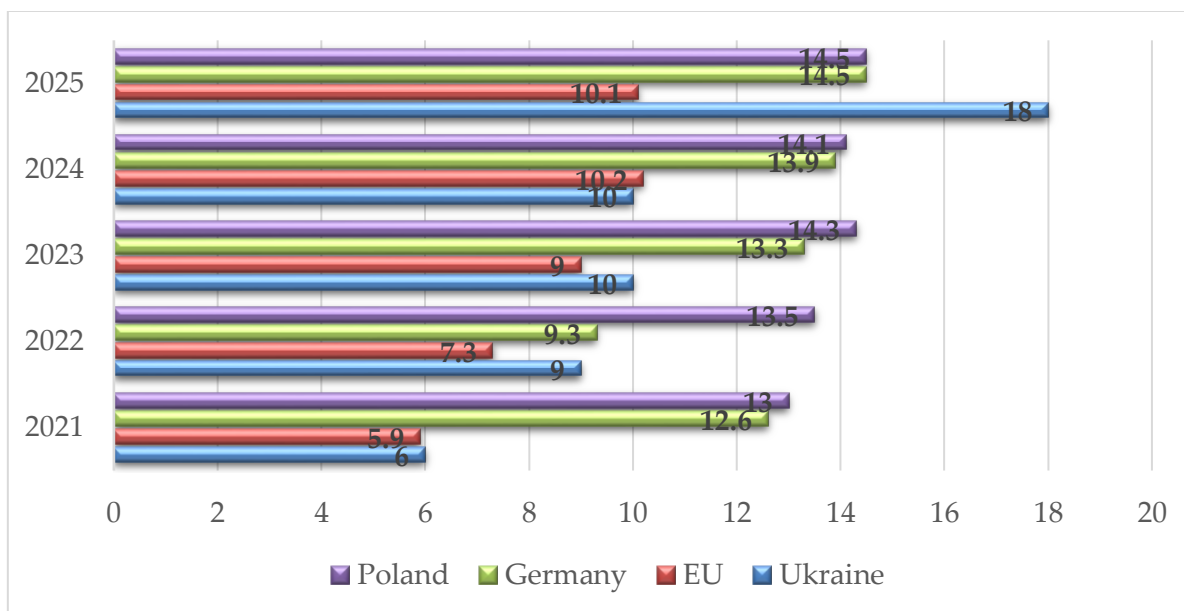


Fig. 2. Dynamics of the MTPL insurance affordability index in Ukraine and Europe, %

Source: calculated by the authors

In the EU, the indicator also shows growth, but it remains significantly lower than in Ukraine, indicating a lower financial burden on households in the EU. For Poland, the indicator was higher than the EU average, but still lower compared to Ukraine. Germany, with the lowest values for the MTPL insurance affordability index, reflects the most favorable situation in the country. Taking into account the income levels and average age of vehicles in Ukraine and the EU, which are reflected in the MTPL insurance affordability index formula, it can be asserted that EU households have better purchasing power for insurance services.

Overall, car insurance in the EU is more affordable. In Ukraine, however, the low income levels combined with high index values create an unbearable burden, negatively impacting the financial stability of households. The obtained results have practical value for developing a substantiated tariff policy in the compulsory motor insurance market. The proposed original indicators – the Insurance Burden Ratio on Wage and the MTPL Insurance Affordability Index – can be used by regulators and insurance companies to assess the economic burden on consumers and to design pricing harmonization strategies aligned with European standards. The scientific novelty of the study lies in the quantitative measurement of the financial implications of price disparities in the insurance sector through the integration of social and macroeconomic indicators into the insurance services accessibility evaluation framework. The research findings also contribute to achieving the Sustainable Development Goals, particularly Goal 8 (Decent Work and Economic Growth) and Goal 10 (Reduced Inequalities), by enhancing financial inclusion, promoting social justice in access to insurance protection, and strengthening household economic resilience.

#### 4. CONCLUSIONS

The research results confirmed that motor insurance remains a pivotal segment of Ukraine's insurance market, highly sensitive to economic and regulatory changes. The gradual implementation of EU standards, aimed at strengthening the financial stability of insurers, has led to a significant increase in tariffs, which, in turn, has reduced the affordability of insurance services for households.

The indicators proposed in the study – the Insurance Burden Ratio on Wages and the MTPL Insurance Affordability Index – enabled a quantitative assessment of the socio-economic impact of regulatory changes. The calculations revealed significant price disparities between Ukraine and EU countries, indicating the need to align tariff policies with the population's income levels.

A deeper understanding of the interrelationships between regulatory changes, population incomes, and pricing in the motor insurance market indicates that the unification of insurance tariffs and regulatory approaches must account for the identified interdependencies. This approach aligns with current trends in financial inclusion development and orientation toward fair socio-economic conditions, which synchronizes with achieving the SDGs. While not diminishing the need to strengthen the financial stability of the insurance market, attention should also be paid to the financial capacity of policyholders, which serves as the foundation for determining the market's readiness to implement new regulatory standards. Otherwise, negative consequences for the structure and stability of demand for insurance services may arise.

The use of the indicators proposed in the study enables the quantitative assessment of the socio-economic impact of price disparities and directs the obtained results toward improving regulatory policy, which in turn enhances market transparency and promotes expanded access of the population to insurance protection.

The scientific novelty of the study lies in the development of a comprehensive approach to measuring the affordability of motor insurance, integrating macroeconomic and social parameters. This approach enables a deeper assessment of the impact of regulatory changes on consumer behavior and the financial stability of the market.

The practical value of the findings lies in their potential use for improving state policy in the insurance sector, harmonizing tariff regulation with European standards, and promoting greater financial inclusion. The proposed indicators can be applied by insurance companies, regulators, and researchers to monitor the affordability of insurance services and predict the impact of future reforms.

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Вергелюк Юлія, Ганцяк Михайло, Богріновцева Людмила, Діденко Людмила, Мирончук Юрій. Фінансові імплікації цінових диспропорцій в автомобільному страхуванні: крос-національний аналіз України та ЄС. *Журнал Прикарпатського університету імені Василя Стефаника*, **13** (2) (2026), 22-36.

Цінові диспропорції в автомобільному страхуванні створюють фінансову нерівність та перешкоджають ефективній реалізації функцій страхування, нівелюючи його соціальне призначення. Гармонізація страхових стандартів із нормами Європейського Союзу спричинила необхідність зміни діючих систем ціноутворення страховиків, загостривши проблему різкого зростання вартості полісів ОСЦПВ в Україні. Метою статті є дослідження фінансових імплікацій цінових диспропорцій в ОСЦПВ через розробку авторських показників економічного тиску на домогосподарства України та їх крос-національне порівняння з ринками ЄС для обґрунтування стратегій гармонізації страхової політики. Емпіричний аналіз охоплює 2021–2024 роки й використовує статистичні, порівняльні методи та економіко-математичне моделювання. Обґрунтовано необхідність оцінки фінансової спроможності споживачів страхових послуг та запропоновано використання коефіцієнта фінансового навантаження на доходи та індексу доступності страхування, що відображає авторський підхід та враховує доходи, вік автопарку та вартість полісів ОСЦПВ. Наукова новизна полягає в кількісній оцінці цінових диспропорцій в автомобільному страхуванні з використанням розроблених індикаторів. Результати засвідчили, що зростання вартості полісів в Україні створює надмірне фінансове навантаження на домогосподарства. На ринку автострахування в ЄС спостерігаються значно менші цінові диспропорції, а отже, економічні умови забезпечують вищу доступність страхування. Практичне значення дослідження полягає в можливості врахування запропонованих індикаторів державними регуляторами та страховиками в ході вдосконалення тарифної політики та її гармонізації з європейськими стандартами, налаштовуючи ринок на колію соціальної ефективності, доступності та сприяння досягненню цілей сталого розвитку.

**Ключові слова:** страховий ринок, страхування, автомобільне страхування, доступність страхування, індекс доступності страхування, коефіцієнт навантаження на заробітну плату, цінові диспропорції.