

### NATIONAL COMMISSION FOR FINANCIAL MARKETS

### DECISION

on the Approval of the Methodology for Calculating and Applying Base Insurance Premiums and the Corresponding Adjustment Coefficients for Compulsory Internal and External Motor Vehicles Liability Insurance

No 31/2 of 16 June 2023 (in force as of 27.06.2023)

Official Monitor of the Republic of Moldova No 216-219 Article 623 of 27 June 2023

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	REGISTERED:
	Ministry of Justice
	of the Republic of Moldova
	No 1801 of 22 June 2023
Minister	Veronica MIHAILOV-MORARU

Pursuant to the provisions of Article 12 paragraph 4) and 5) of Law No 106/2022 on Compulsory Motor Third Party Liability Insurance against Damage Caused by Motor Vehicles (Official Monitor of the Republic of Moldova, 2022, No 129-133, Article 239), the National Commission for Financial Markets

### **DECIDES:**

- 1. To approve the Methodology for Calculating and Applying Base Insurance Premiums and the Corresponding Adjustment Coefficients for Compulsory Internal and External Motor Vehicles Liability Insurance (shall be annexed).
- 2. To repeal paragraph 1 and Annex 1 of the Decision of the National Commission for Financial Markets No 57/13/2018 on compulsory motor third party liability insurance premiums (the Official Monitor of the Republic of Moldova, 2019, Nr 76-85, Article 416), registered at the Ministry of Justice of the Republic of Moldova No 1422 on 21 February 2019.
- 3. This Decision shall enter into force on the date of its publication in the Official Monitor of the Republic of Moldova.

CHAIRMAN No 31/2. Chisinau, 15 June 2023. **Dumitru BUDIANSCHI** 

Approved by the Decision of the National Commission for Financial Markets No 31/2 of 15 June 2023

#### **METHODOLOGY**

for Calculating and Applying Base Insurance Premiums and the Corresponding Adjustment Coefficients for Compulsory Internal and External Motor Vehicles Liability Insurance

### I. GENERAL PROVISIONS

- 1. The Methodology for Calculating and Applying Base Insurance Premiums and the Corresponding Adjustment Coefficients for Compulsory Internal and External Motor Vehicles Liability Insurance (hereinafter Methodology) lays down a unified approach for determining and applying base insurance premiums and the adjustment coefficients, utilising the Statistical Database, organized as outlined in the Annex to this Methodology.
- **2.** For the purpose of this Methodology, the following definitions shall apply: *adjustment coefficient* a coefficient calculated using actuarial methods and which determines the extent of risk based on a specific risk factor;

large claims – 1 percent of the total number of insured cases with the highest amounts of claims/damages paid;

risk exposure – the period of time (expressed in years) during which policies are in force within a calendar year;

loading factor – an addition to the estimated risk premium, intended to cover the expenses of the insurance undertaking, the profit margin and the effects of applying the bonus-malus system in the case of compulsory domestic MTPL insurance contracts;

risk factor – a factor that influences the extent of risk:

trend factor - a factor determined using (statistical and econometric regression) methods to estimate variable trends;

estimated frequency of claims - number of claims for a policy-year exposed to risk;

risk margin – an addition to the pure premium intended to mitigate the variation in risk; estimated risk premium – the pure premium plus the risk margin;

pure premium - the premium that covers the cost of the insured risk without taking into account the risk margin or the expenses of the insurance undertaking;

credibility theory - a method to adjust calculation results, applied to mitigate/level out large variations that arise due to insufficient statistical information used in the calculation.

- **3.** The base insurance premium and the adjustment coefficients set out in this Methodology shall be determined utilising:
- 1) the unified information system, provided for in Article 6 paragraph 1) letter b) of Law No 106/2022 on Compulsory Motor Third Party Liability Insurance against Damage Caused by Motor Vehicles (hereinafter Law No 106/2022);
- 2) the register of insurance contracts provided for in Article 42 paragraph 2) of Law 106/2022;
- 3) the register of paid and declared but unsettled claims kept by insurance undertakings;
- 4) information on the average annual inflation rate, according to official information of the National Bureau of Statistics of the Republic of Moldova;
- 5) information on the distribution of the historical portfolio of policies underwritten by bonus-malus classes.

- 4. Insurance undertakings licensed to conduct compulsory motor third party liability insurance (hereinafter MTPL) shall submit to the supervisory authority annually, by 15 February of the current year, the statistical database (except for doubling of reconcluded/amended contracts and doubling of claims files, for which additional payments are made or negative amounts are included), according to the Annex to the Methodology, as follows:
- 1) the statistical database in Microsoft Excel format shall be submitted for the previous year, officially confirmed by a letter with a qualified electronic signature affixed by the head of the executive body of the insurance undertaking;
- 2) the insurance undertakings being in business for less than 5 years shall submit the statistical database for the entire period of activity.
- **5.** For the purpose of Article 12 paragraph 13) of Law No 106/2022, sufficient statistical information on compulsory internal and external MTPL insurance shall be considered:
  - 1) the possession of all data relating to adjustment coefficient; and/or
  - 2) the cumulative fulfilment of the following conditions:
  - a) minimum period of activity of at least 5 consecutive years;
- b) a minimum annual number (for each year taken into account) of claims on policies exposed at risk for compulsory internal and external MTPL insurance (for each area) of 300 units.
- **6.** The supervisory authority shall calculate the reference premiums, base insurance premiums, and the adjustment coefficients related to compulsory internal and external MTPL insurance at least once a year. This calculation shall be based on generalized statistical data at the market level for the last 5 consecutive years, as submitted in accordance with paragraph 4 of the Methodology and shall be published in the Official Monitor of the Republic of Moldova.
- 7. The reference premium shall be calculated as the product of the base insurance premium and the adjustment coefficients, to which the bonus-malus system established in accordance with the regulations is then applied.
- **8.** The actuary of the insurance undertaking shall, in accordance with this Methodology, calculate the base insurance premium and the adjustment coefficients for risk factors using actuarial methods. This calculation shall be based on statistical information (at the level of the insurance undertaking) concerning the number of insurance policies exposed to risk, the number of claims paid, the amount of claims paid, the amount of claims declared but not settled, and the forecast for the development of the number of policies and the amount of claims, as set out in the Annex. The amount of the base insurance premiums shall be adjusted by a trend factor, which shall take into account the development and trend over time of the premiums.
- **9.** The actuary may apply trend methods (developed and argued in the actuarial report) based on time series to determine the base insurance premium, selecting the final result according to the financial situation of the insurance undertaking (applying interpolations of the base premium amounts or selecting the maximum amount).

### II. BASE INSURANCE PREMIUM

**10.** The base insurance premium for internal MTPL insurance for a transport unit for a period of 12 months shall be calculated according to the formula:

$$P_b = \frac{P_e}{\left(1 - \frac{f}{100}\right) * \left(1 - \frac{\beta}{100}\right)}$$

where:

 $P_b$  - base insurance premium for compulsory internal MTPL insurance;

- $P_{e}$  the estimated risk premium for compulsory internal MTPL insurance, calculated according to the paragraph 13;
- f the share of the loading factor in the base insurance premium relating to the expenses and profit margin of the insurance undertaking for compulsory internal MTPL insurance, expressed as a percentage and determined according to paragraph 45;
- $\beta$  the share of the loading factor in the base insurance premium relating to the bonus-malus system, expressed in percentages and determined according to paragraph 11
- 11. The share of the loading factor in the base insurance premium for the bonus-malus system ( $\beta$ ) shall be determined according to the formula:

$$\beta = \left(1 - \frac{\sum_{i=M}^{17} K_i^{bm} \cdot P_i}{\sum_{i=M}^{17} P_i}\right) \cdot 100$$

 $K_i^{bm}$  - the bonus-malus coefficient set for each *i* bonus-malus class (*i=M,1,...,17*);

 $P_i$ - the number of insurance policies underwritten for compulsory internal MTPL insurance for the last calendar year used to calculate the base insurance premium and the adjustment coefficient.

12. The base insurance premium for compulsory external MTPL insurance for a transport unit for a period of 12 months shall be calculated according to the formula:

$$P_b = \frac{P_e}{1 - \left(\frac{f}{100}\right)}$$

where:

 $P_b$  - the base insurance premium for compulsory external MTPL insurance;

*P*<sub>e</sub> - the estimated risk premium for compulsory external MTPL insurance, calculated according to paragraph 13:

f – the share of the loading factor in the base insurance premium relating to the expenses and profit margin of the insurance undertaking for compulsory external MTPL insurance, expressed as a percentage and determined according to paragraph 46.

13. The estimated risk premium shall be determined as the sum of the pure premium and the risk margin, taking into account the inflation rate, according to the formula:

$$P_e = \left(P_p + P_m\right) \times \left(1 + \frac{R_i}{100}\right)$$

where:

P<sub>e</sub> – estimated risk premium;

 $P_p$  – pure premium;

 $P_m$  – risk margin;

 $R_i$  – inflation rate.

**14.** The pure premium shall be determined as the product of the claim frequency and the estimated average loss, according to the following formula:

$$P_p = q \times \overline{D} \times \left(1 + \frac{RDN}{DP + RDDN}\right) \times \left(1 + \frac{DMP}{DP}\right)$$

where:

 $P_p$  - pure premium;

*q* – claim frequency;

 $\overline{D}$  - estimated average loss;

*DP* - the amount of claims paid during the calculation period, including the amount of large claims;

RDDN - the total amount of claims reserves declared but not settled at the end of the last calculation year;

RDN - the total amount of claims reserves not yet settled at the end of the last calculation year;

DMP - total amount of large claims paid in respect of insurance cases excluded from the calculation of the average value of claims and variance of claims.

**15.** Prior to initiating the calculation of claims frequency and average loss, the following shall be done:

1) policies which are not economically relevant are excluded from the calculation of the number of policy-years at risk, so as to exclude an unjustified increase in the number of policy-years at risk (e.g. a policy is recorded more than once in the database as a result of changes in some policy components, while the validity period of the policy remains constant and is repeated for each record);

2) the sum of the claim amount at the insured case level, in instances where the insurance claim is paid in multiple instalments and recorded in the claims register, or in cases of other situations leading to multiple entries in the claims register related to the same insured case (such as corrections of amounts and other components of claims, etc.).

**16.** The frequency of claims shall be calculated according to the following formula:

$$q=\frac{n}{N}$$

where:

q – frequency of claims;

n – number of claims related to policies at risk, which shall be calculated according to the following formula:

$$n = n_p + n_d$$

where:

 $n_p$  - number of claims paid on policies at risk, including the number of large claims paid;

 $n_d$  - the number of claims reported but not settled at the end of the last calculation year on policies exposed to risk, including the number of large claims reported but not settled:

*N* - the number of policy-years at risk, calculated as the ratio of the total number of days on policies that are valid in the policy year to 365 days.

17. The estimated average loss shall be calculated according to the formula:

$$\overline{D} = \exp\left(\mu + \frac{1}{2}S^2\right)$$

where:

 $\overline{D}$  - estimated average loss;

exp(X) - value of exponential function at the point  $X(X = \mu + \frac{1}{2}S^2)$ ;

 $\mu$  - the average amount of claims paid, which shall be determined according to the formula:

$$\mu = \frac{\sum_{i=1}^{m} \ln D_i}{m}$$

- $D_{i-}$  the amount of the damage paid in respect of the insured event i, without taking into account the amounts relating to large claims;
- m the number of insured cases paid, without taking into account the number of large claims;
  - $S^2$  variation, which shall be determined according to the formula:

$$S^2 = \frac{\sum_{i=1}^m (\ln D_i - \mu)^2}{m}$$

18. For calculations made by the insurance company actuary, the RDDN and RDN value is equivalent to the value recorded in the financial statements of the insurance undertaking, and for calculations referring to the reference premium carried out by the supervisory authority, the RDDN value is equivalent to the total market value of the RDDN recorded in the financial statements of the insurance undertakings, while the RDN value is determined according to the actuarial method based on loss development triangles (chain-ladder method), as follows:

Devel	opment	table –	Paid	claims
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Year of origin (i)		]	Developi	ment	year (j)		
	1	2	3	•••	n-2	n-1	n
1	$d_{1;1}$	$d_{1;2}$	$d_{1;3}$		$d_{1;n-2}$	$d_{1;n\text{-}1}$	$d_{1;n}$
2	$d_{2;1}$	$d_{2;2}$	$d_{2;3}$		$d_{2;n-2}$	$d_{2;n-1}$	
3	$d_{3;1}$	$d_{3;2}$	$d_{3;3}$		$d_{3;n-2}$		
•••	•••	•••	•••		•••	•••	•••
n-2	$d_{n-2;1}$	$d_{n-2;2}$	$d_{n-2;3}$				
n-1	$d_{n-1;1}$	$d_{n-1;2}$					
n	$d_{n;1}$						

#### where:

- $d_{(i,j)}$  the amounts of claims paid during the development years (j) and related to insured cases occurring during the years of origin (i).
- 1) the amount of the claim shall be determined for each year of origin, the cumulative data being presented according to the development table below:

Development table - cumulative paid claim

Year of origin (i)	Development year (j)						
	1	2	3	•••	n-2	n-1	n
1	$D_{1;1}$	$D_{1;2}$	$D_{1;3}$		$D_{1;n-2}$	$D_{1;n-1}$	$D_{1;n}$
2	$D_{2;1}$	$D_{2;2}$	$D_{2;3}$		$D_{2;n-2}$	$D_{2;n-1}$	
3	$D_{3;1}$	$D_{3;2}$	$D_{3;3}$		$D_{3;n-2}$		
•••							
n-2	D <sub>n-2;1</sub>	D <sub>n-2;2</sub>	D <sub>n-2;3</sub>				
n-1	D <sub>n-1;1</sub>	D <sub>n-1;2</sub>					
n	$D_{n;1}$						

$$D(i;j) = \sum_{k=1}^{j} d(i;k); \ j = 1,2,3,...,n-1,n.$$

## Development table - Claims declared but not settled

Year of origin (i)	Development year (j)						
	1	2	3		n-2	n-1	n
1	$R_{1;1}$	$R_{1;2}$	$R_{1;3}$		$R_{1;n-2}$	$R_{1;n-1}$	$R_{1;n}$
2	R <sub>2;1</sub>	$R_{2;2}$	$R_{2;3}$		R <sub>2;n-2</sub>	R <sub>2;n-1</sub>	
3	R <sub>3;1</sub>	R <sub>3;2</sub>	R <sub>3;3</sub>		R <sub>3;n-2</sub>		
•••							
n-2	R <sub>n-2;1</sub>	R <sub>n-2;2</sub>	R <sub>n-2;3</sub>				
n-1	R <sub>n-1;1</sub>	R <sub>n-1;2</sub>					
n	$R_{n;1}$						

### where:

 $R_{(i,j)}$  - the amounts of reserves for declared but unsettled claims outstanding at the end of the development years period relating to insured cases arising during the years of origin period.

## Development table - Claims incurred

Year of origin (i)			Developi	nent	year (j)		
	1	2	3	•••	n-2	n-1	n
1	$X_{1;1}$	$X_{1;2}$	$X_{1;3}$		$X_{1;n-2}$	$X_{1;n-1}$	$X_{1;n}$
2	$X_{2;1}$	$X_{2;2}$	$X_{2;3}$		$X_{2;n-2}$	$X_{2;n-1}$	
3	$X_{3;1}$	$X_{3;2}$	$X_{3;3}$		$X_{3;n-2}$		
•••	•••	•••					
n-2	X <sub>n-2;1</sub>	$X_{n-2;2}$	$X_{n-2;3}$				
n-1	$X_{n-1;1}$	$X_{n-1;2}$					
n	$X_{n;1}$						

where:

$$X_{(i,j)} = D_{(i,j)} + R_{(i,j)}$$

## Development table – estimated claims

Year of origin (i)		Development year (j)								
	1	2	3	•••	n-2	n-1	n			
1	$X_{1;1}$	$X_{1;2}$	$X_{1;3}$		$X_{1;n-2}$	$X_{1;n-1}$	$X_{1;n}$			
2	$X_{2;1}$	$X_{2;2}$	$X_{2;3}$		$X_{2;n-2}$	$X_{2;n-1}$	$Y_{2;n}$			
3	$X_{3;1}$	$X_{3;2}$	$X_{3;3}$		$X_{3;n-2}$	Y <sub>3;n-1</sub>	Y <sub>3;n</sub>			
•••			•••		•••	•••	•••			
n-2	$X_{n-2;1}$	$X_{n-2;2}$	$X_{n-2;3}$		$\mathbf{Y}_{\text{n-2};\text{n-2}}$	$Y_{n-2;n-1}$	$Y_{n-2;n}$			
n-1	$X_{n-1;1}$	$X_{n-1;2}$	$Y_{n-1;n-3}$		$\mathbf{Y}_{\text{n-1;n-2}}$	$\mathbf{Y}_{\text{n-1};\text{n-2}}$	$Y_{n-1;n}$			
n	$X_{n;1}$	$\mathbf{Y}_{n;2}$	$Y_{n;3}$		$\mathbf{Y}_{\mathbf{n};\mathbf{n-2}}$	$\mathbf{Y}_{n;n-1}$	$X_{n;n}$			
		r <sub>1;2</sub>	$r_{2;3}$		r <sub>n-3;n-2</sub>	$r_{n-2;n-1}$	$r_{n-1;n}$			

2) development factors shall be determined as indices of change in the form of coefficients:

$$\mathbf{r}_{(j-1;j)} = max \left[ \frac{\sum_{i=1}^{j} \mathbf{x}_{(i;j)}}{\sum_{i=1}^{j} \mathbf{x}_{(i;j-1)}}; 1 \right]; \quad j = 2,3,4,...,n.$$

- 3) in the event of insufficient information/data, in order to ensure a probability of confidence in the estimates obtained, the correction of the development factors and their determination by other calculation methods, established by the actuary and justified in the actuarial report, shall be allowed;
- 4) using development factors, the accumulated outstanding losses shall be estimated for each year of origin, and the runoff table shall be completed with the obtained values:

$$Y_{(i;j)} = X_{(i;j-1)} * \prod_{t=j}^{n} r_{(t-1;t)} ; j = 2,3,4,...,n.$$

5) the amount of the unreported losses shall be determined:

$$DN = \sum_{i=2}^{n} (Y_{(i;n)} - X_{(i;n-i+1)})$$

where:

DN - amount of the unreported losses.

- 19. In order to obtain more accurate claim development results, it is recommended to perform a regression-based analysis and apply the so-called "tail" factor to take into account the development of claims paid outside the triangles.
  - **20.** The risk margin shall be calculated according to the formula:

$$P_{m} = \alpha(g) \times P_{p} \times \sqrt{\frac{1 - q + V^{2}}{q \times N_{h}}}$$

where.

 $\alpha_{(g)}$  - the safety coefficient, based on the normal probability distribution g, with which the results are guaranteed (according to the Gauss-Laplace table);

 $P_p$  – pure premium;

q - claims frequency;

*V* – coefficient of variation of total damage.

 $N_h$  - the number of policy-years at risk for the following year for which the base insurance premium is calculated and determined according to the formula:

$$N_{h} = N_{h-1} * \left(\frac{N_{h-1}}{N_{h-t}}\right)^{\frac{1}{t-1}}$$

where:

 $t-5,6,\ldots,n$  (previous period on the basis of which the number of policy-years at risk is estimated).

**21.** The coefficient of variation of total damage shall be calculated according to the formula:

$$V = \frac{\sigma_d}{\overline{D}}$$

where:

- $\sigma_{d-\text{mean square deviation of losses;}}$
- $\bar{D}$  estimated average loss.
  - 22. The mean square deviation shall be calculated according to the formula:

$$\sigma_d = \sqrt{\exp(2\mu + S^2) \times [(\exp(S^2)) - 1]}$$

# ADJUSTMNET COEFICIENTS FOR COMPULSORY DOMESTIC MTPL INSURANCE

**23.** The adjustment coefficients to be applied to the base insurance premium for compulsory internal MTPL insurance are as follows:

Risk factors	Coefficient
Category of the vehicle	$\mathbf{K}_1$
Territory of use of the vehicle	$K_2$
Legal status of the insured	K <sub>3</sub>
Age and length of driving experience of the insured person	$K_4$
Place of registration of the vehicle	K <sub>5</sub>
Insurance term	$K_6$

- **24.** The adjustment coefficients shall be calculated on the methodology outlined in paragraph 14 for determining the pure premium, and this calculation shall be applied to each individual risk factor. In cases where the calculated coefficients for risk factors yield atypical values, the use of stochastic/regression methods and credibility theory to mitigate substantial variations is permitted, and such utilization is considered justified in the actuarial report.
- **25.** The adjustment coefficients shall be calculated by dividing the pure premium derived from the risk factors categorized in accordance with the classifications mentioned in paragraphs 26 to 29, 41, and 42 by the total pure premium per vehicle category.
- **26.** The adjustment coefficient K1 shall be determined according to the vehicle category, engine capacity, number of seats or total mass of the vehicle as follows:

# Category of vehicle

a) vehicle:
with an engine cylinder capacity up to 1 200 cm <sup>3</sup>
with an engine cylinder capacity between 1 201 and 1 600 cm <sup>3</sup>
with an engine cylinder capacity between 1 601 and 2 000 cm <sup>3</sup>
with an engine cylinder capacity between 2 001 and 2 400 cm <sup>3</sup>
with an engine cylinder capacity between 2 401 and 3 000 cm <sup>3</sup> inclusive
with an engine cylinder capacity over 3 000 cm <sup>3</sup>
taxi (only for legal entities)
electric vehicles
b) vehicles intended for the carriage of passengers:
up to 17 seats, including the driver's seat
from 18 to 30 seats, including the driver's seat
over 30 seats
trolleybuses

c) road tractors with engine power:
up to and including 45 HP
from 46 HP up to and including 100 HP
over 100 CP
d) trucks and vehicles other than those referred to in (a) to (c) whose maximum authorised mass is:
up to 3 500 kg
between 3 501 and 12 000 kg inclusive
over 12 000 kg
e) motorcycles:
up to and including 300 cm <sup>3</sup>
over 300 cm <sup>3</sup>

- 27. The K2 adjustment coefficient shall be determined based on the level of car traffic in specific areas vehicle usage. For individuals, the usage area shall be determined by the insurance company at the time of contract conclusion, based on the residential address provided in the policyholder's identity card. For legal entities, the usage area shall be determined based on their registered legal address. For the purposes of this Methodology, the following classification shall be established:
- 1) Chisinau municipality, Hincesti, Orhei, Straseni, Ialoveni, Anenii Noi and Criuleni districts;
  - 2) locations distinct from those mentioned in a).
- **28.** The K3 adjustment coefficient shall be determined based on the legal status of the insured person and shall be classified as follows:

## Legal status of the insured

Individuals

Legal entities, individuals engaged in entrepreneurial activity, other legal entities, with the exception of legal persons engaged in taxi and trolleybus services

**29.** The K4 adjustment coefficient shall be determined based on the age and length of service of the insured person and shall be applied to contracts concluded by individuals. Driving age shall be determined according to the driver's licence or the information in the State Register of Drivers and is classified as follows:

# Age and length of service

Age up to and including 23 years and driving experience up to and including 2 years
Age up to and including 23 years driving experience of over 2 years
Age over 23 years and driving experience up to and including 2 years
Age over 23 years and driving experience of over 2 years

- **30.** The K5 adjustment coefficient shall be applied to vehicles registered abroad and used temporarily on the territory of the Republic of Moldova and shall be equal to 3.
- 31. The adjustment coefficient K6 shall be determined based on the term of insurance, in accordance with Article 9 paragraph (2<sup>1</sup>) and (3) of Law 106/2022, if the insurance contract is concluded for a period of less than 12 months but not less than 30 days and constitutes:

#### Term of insurance

1 month	2 months	3 months	4 months	5 months	6 months	7 months	8 months	9 months	10 months and over
0,15	0,3	0,4	0,5	0,6	0,7	0,8	0,85	0,9	1

- **32.** The bonus-malus coefficient  $(K_{bm})$  shall be applied according to the regulations in force. In case of an insurance applicant whose vehicle is registered abroad and temporarily used within the territory of the Republic of Moldova, the bonus-malus coefficient  $(K_{bm})$  shall be set as 1.
- **33.** The coefficient for managing acquisition costs  $K_{gc}$  shall be individually determined and applied by the insurance company when insurance contracts are concluded for taxi and trolleybus vehicle categories in cases where acquisition costs are not incurred.
- **34.** The coefficient related to the  $K_{dd}$  direct settlement procedure shall be established and applied individually by the insurance company, provided that the conditions laid down in Article 31 of Law 106/2022 are met.
- **35.** The coefficients referred to in paragraphs 33 and 34 shall be individually applied in the cases outlined for determining the insurance premium as described in paragraph 36. If these coefficients are not applied, their value shall default to 1.
- **36.** The insurance premium for vehicles registered in the Republic of Moldova shall be set by the insurance company in agreement with the insured, according to the formula:

$$P_a = P_b \times K_1 \times K_2 \times K_3 \times K_4 \times K_6 \times K_{bm} \times K_{ac} \times K_{dd}$$

Pa - insurance premium;

 $P_b$  – base insurance premium;

K – adjustment coefficient ( $K_4$  – shall be applied for individuals,  $K_{gc}$  and  $K_{dd}$  – shall be applied according to paragraph 35).

**37.** The insurance premium for vehicles registered outside the Republic of Moldova shall be set by the insurance company according to the formula:

$$P_a = P_b \times K_1 \times K_5 \times K_6$$

**38.** The insurance premium for trailers and semi-trailers shall be determined by applying a uniform coefficient of 0.2 for internal compulsory motor third-party liability insurance and 0.1 for external compulsory motor third-party liability insurance to the premium of the towing vehicle, regardless of the area.

# IV. ADJUSTMENT COEFFICIENTS FOR COMPULSORY EXTERNAL MTPL INSURANCE

- **39.** The base insurance premium for compulsory external motor third party liability insurance shall be set separately for Area 1 (Ukraine and Belarus), Area 2 (Ukraine, Belarus and the Russian Federation) and Area 3 (all Green Card International Insurance System countries).
- **40.** The adjustment coefficients to be applied to the base insurance premium for compulsory external motor third party liability insurance are as follows:

Risk factors	Coefficient
Vehicle category	$K_{1v}$
Insurance term	$K_{2v}$

**41.** The adjustment coefficient  $K_{1v}$  shall be determined according to the vehicle category, the number of seats or the total mass of the vehicle.

Category of vehicle	Vehicle category code according to Council Regulations of the Bureaux of the International "Green Card" Insurance System
vehicles	A
motorcycles	В
trucks with a total mass up to 3.5 tonnes	C1
trucks and tractors with a total mass exceeding 3,5 tonnes	C2
vehicles used for the carriage of passengers with up to 17 seats, including the driver	E1
vehicles used for the carriage of passengers and comprising more than 17 seats	E2

**42.** The adjustment coefficient K2v shall be determined for insurance contracts with durations of less than 12 months and is provided in the table below:

### Term of insurance

Insuranc e area	15 day s	1 mont h	2 month s	3 month s	4 month s	5 month s	6 month s	7 month s	8 month s	9 month s	10 month s and more
Area 1	0,15	0,2	0,3	0,4	0,5	0,6	0,7	0,8	0,85	0,9	1
Area 2	0,1	0,2	0,3	0,4	0,5	0,6	0,7	0,8	0,85	0,9	1
Area 3	0,1	0,2	0,3	0,4	0,5	0,6	0,7	0,8	0,85	0,9	1

**43.** The compulsory external MTPL insurance premium shall be determined according to the formula:

$$P_a = P_b * K_{1v} \times K_{2v}$$

where:

*P<sub>a</sub>* – insurance premium;

K – adjustment coefficient.

**44.** The base insurance premium for compulsory external MTPL insurance shall be set in euros. The insurance premium shall be charged to the insured person in Moldovan lei at the exchange rate set by the National Bank of Moldova on the date of payment.

# V. SHARE OF THE LOADING FACTOR IN INSURANCE PREMIUM FOR COMPULSORY INTERNAL AND EXTERNAL MTLP INSURANCE

- **45.** The share of the loading factor in the base insurance premium related to the expenses and profit margin of the insurance undertaking for compulsory domestic MTPL insurance includes:
  - 1) expenses of the insurance undertaking from 25%, of which:
  - a) payments and contributions according to the regulations;
  - b) expenses, other than those provided for in letter a).
  - 2) Profit margin from 5% to 10%.

- **46.** The share of the loading factor in the base insurance premium related to the expenses and profit margin of the insurance undertaking for compulsory external MTPL insurance includes:
  - 1) expenses of the insurance undertaking from 25%, of which:
  - a) payments and contributions according to the regulations;
  - b) expenses, other than those provided for in letter a).
  - 2) Profit margin from 5% to 10%.
- 47. The supervisory authority shall use the information submitted by the insurance undertaking in the Technical Result Report for MTPL and "Green Card" insurance when determining the loading factor's portions in the reference premium for compulsory internal and external MTPL insurance.

# VI. GUIDELINES FOR CALCULATING THE BASE INSURANCE PREMIUM AND ADJUSTMENT COEFFICIENTS RELATING TO COMPULSORY INTERNAL AND EXTERNAL MTLP INSURANCE

- **48.** The insurance undertaking shall annually determine the base insurance premiums and compulsory adjustment coefficients for both internal and external MTPL insurance through internal actuarial calculations, following this Methodology.
- **49.** Insurance undertakings shall annually provide the supervisory authority with information on insurance premiums and adjustment factors for both compulsory internal and external MTPL insurance before their implementation. This submission shall include an actuarial report, confirmed with the qualified electronic signature of the insurance undertaking's actuary. All documents should be submitted electronically within 10 calendar days following the publication of the reference premium.
  - **50.** The actuarial report referred to in paragraph 49 shall contain at least the following:
- 1) confirmation of the correctness of all data which the calculation of the base insurance premium and the adjustment factors (technical provisions, claims paid and policy years at risk) is based;
  - 2) the actuarial methods and assumptions used, along with their justification;
- 3) an explanation of how the base insurance premium and adjustment factors have been determined, including a component and risk segment analysis to demonstrate their appropriateness:
  - a) the estimated risk premium;
- b) the loading factor intended to cover the expenses of the insurance undertaking, the profit margin, and the effects of the application of the bonus-malus system;
  - c) the adjustment factors.
- 51. Insurance undertakings shall be responsible for the accuracy, veracity and timeliness of the information submitted to both the supervisory authority and the actuaries. They shall also be obligated to promptly notify the supervisory authority of any errors detected in previously submitted data for all management periods in which they occurred or had an impact.
- **52.** The insurance undertaking shall notify the supervisory authority of the establishment or modification (by adjustment of the loading factor) of the base insurance premiums, if:
- 1) it obtains/regains the right to issue compulsory internal and/or external MTPL insurance policies/certificates;
- 2) it records a combined operational rate exceeding 100 percent for the last two consecutive reporting periods (calculated for the last 12 months) since the last change in the base insurance premium, unless the insurance company provides substantiated evidence that the recording of a combined operational rate exceeding 100 percent is due to the influence of large claims which do not indicate a systematic nature;

- 3) it finds grounds for a change in the base insurance premium based on economic and financial forecasts and analyses of the efficiency of compulsory motor-third party liability insurance business based on the last two consecutive reporting periods.
- **53.** In the case referred to in paragraph 52, the notification shall be accompanied by an explanatory note, detailing the procedures carried out and the results obtained, confirmed by the qualified electronic signature of the insurance undertaking's actuary.
- **54.** The supervisory authority shall examine the base insurance premiums and the adjustment coefficients for the risk factors related to compulsory internal and external MTPL insurance within 30 days from the date of receiving the complete set of documents in accordance with paragraphs 49, 50, and 52.
- **55.** If changes occur during the examination period of the base insurance premiums and adjustment factors submitted in accordance with paragraph 49, the insurance undertaking shall be obligated to promptly inform the supervisory authority and submit the adjusted documents or information.
- **56.** If the supervisory authority finds any discrepancies between the elements of the base insurance premium and the values relevant to the specialist reports submitted by the insurance undertaking, it shall return the documents for further calculations and inform the insurance undertaking in writing.
- 57. In cases mentioned in paragraphs 55 and 56, as well as situations where additional information is required or inconsistencies identified by the supervisory authority need resolution, the supervisory authority may, after notifying the company, establish a time limit longer than the specified 30 days, but not exceeding 90 days as per the conditions of the Administrative Code. In such instances, the insurance company shall apply the higher of the base insurance premium and the adjustment coefficients (as submitted in the previous year) and the reference premium.
- 58. An insurance undertaking which fails to submit the set of documents and/or statistical database or submits documents and/or statistical database containing erroneous or incomplete data and/or does not comply with the deadlines for their submission or does not have sufficient statistical data in accordance with this Methodology, shall apply the reference premium for a set period, but not exceeding one calendar year, based on the decision of the supervisory authority.
- **59.** Insurance undertakings shall publish on their official website the base insurance premium and the adjustment coefficients related to compulsory internal and external motor third party liability insurance after examination by the supervisory authority.

Annex to the Methodology for Calculating and Applying the Base Insurance Premium and Adjustment Coefficients Relating to Compulsory Internal and External MTPL Insurance

### STATISTICAL DATABASE

INFORMATION on compulsory domestic MTPL insurance policies

MTP L polic y num ber	Perio of insur- nce state in th MTF polic Fro m	ra ed ie PL	nce premi um receive d,	e categ ory	Data on the residence/ legal address of the insured person (K <sub>2</sub> )	legal	Age and length of driving experie nce of the insured person (K <sub>4</sub> )	Place of vehicle registra tion (K <sub>5</sub> )	applied	Termin ated contract	Termina tion date
1	2	3	4	5	6	7	8	9	10	11	12
Total	X	X		X	X	X	X	X	X	X	X

# INFORMATION on claims paid on domestic MTPL contracts

Numb er of the claim file	L	Date of accide nt	Date of dama ge repor t (for the first time)		Amount of compensat ion paid, MDL		the	status / Natur al or	length of driving experie nce of the	Place of registrat ion of the vehicle (K <sub>5</sub> )
1	2	3	4	5	6	7	8	9	10	11
Total	X	X	X	X		X	X	X	X	X

# INFORMATION on the value of claims declared but not settled on internal MTP contracts

Numbe r of the claim file		Date of accident s	Date of damag e report (for the first time)	amount of	categor y (K <sub>1</sub> )	Details of the residence/leg al address of the insured person (K <sub>2</sub> )	status/	Age and length of driving experienc e of the insured person (K <sub>4</sub> )	n of the
1	2	3	4	5	6	7	8	9	10

Total	X	X	X	X	X	X	X	X

### **GUIDELINES FOR COMPLETION**

- 1. Tables shall be completed in Microsoft Excel format.
- 2. A separate file shall be submitted for each year.
- 3. If information regarding insurance policies, paid claims, and outstanding claims amounts is submitted in a format other than that set out in this Annex, the insurance undertaking shall resubmit the information as necessary until compliance is achieved.
- 4. The tables shall contain all data needed to calculate the base insurance premium.
- 5. The tables show the total policies issued and claims paid for the period 01.01.\_\_\_\_
   31.12.\_\_\_\_ and the estimated amount of claims reported but outstanding at the end of the reporting year.
- 6. The duration of the insurance, the date of termination, the date of the accident, the date of the damage report and the date of payment of the insurance claim shall be indicated in the following format DD.MM.YYYY.
- 7. The total amount of insurance premiums received, paid claims and the reserve for reported claims but not settled (outstanding at the end of the reporting year) shown in the tables shall correspond to the amount shown in the specialist reports submitted for the annual statements.
- 8. The following coding is used to fill in the above tables:

The vehicle category shall be coded as follows:

Vehicle category	Code
a) vehicles:	
with an engine cylinder capacity up to 1 200 cm <sup>3</sup>	11
with an engine cylinder capacity between 1 201 and 1 600 cm <sup>3</sup>	12
with an engine cylinder capacity between 1 601 and 2 000 cm <sup>3</sup>	13
with an engine cylinder capacity between 2 001 and 2 400 cm <sup>3</sup>	14
with an engine cylinder capacity between 2 401 and 3 000 cm <sup>3</sup> inclusive	15
with an engine cylinder capacity over 3 000 cm <sup>3</sup>	16
taxi (for legal entities only)	17
electric vehicles	18
b) vehicles intended for the carriage of passengers:	
up to 17 seats, including the driver's seat	21
from 18 to 30 seats, including the driver's seat	22
over 30 seats	23
trolleybuses	24
c) road tractors with engine power:	
up to and including 45 HP	31
from 46 HP to 100 HP inclusive	32
over 100 CP	33
d) lorries and vehicles other than those referred to in (a) to (c) whose maximum authorised mass is:	

up to 3 500 kg	41
between 3 501 and 12 000 kg inclusive	42
over 12 000 kg	43
e) motorcycles:	
up to and including 300 cm <sup>3</sup>	51
over 300 cm <sup>3</sup>	52
f) trailer	61

Data on the domicile of natural person and legal address of legal entities shall be coded as follows:

Domicile/legal address of the insured person	Code
municipality of Chisinau, Hâncești, Orhei, Strășeni, Ialoveni, Anenii Noi and	1
Criuleni districts	
other places	2

The legal status shall be codified as follows:

Legal status of the holder	Code
individuals	1
legal entities, individuals – entrepreneurs, other legal entities, except the legal persons operating taxi and trolleybus services	2
legal persons operating taxi and trolleybus services	0

Age and length of driving experience shall be codified as follows:

Age and length of driving experience	Code
age up to and including 23 years old and driving experience up to and including 2 years	1
age up to and including 23 years old and driving experience of over 2 years	2
age over 23 years old and driving experience up to and including 2 years old	3
Age over 23 years old and driving experience over 2 years	4
legal persons*	0

Coding is required for information related to legal entities not subject to the K4 coefficient.

Place of registration of the vehicle shall be codified as follows:

Place of registration of the vehicle	Code
The Republic of Moldova	1
Outside of the Republic of Moldova	2

## The column "Terminated contracts" shall contain:

For terminated contracts	YES
For contracts not yet terminated	NO

The applied bonus-malus coefficient is indicated depending on the bonus-malus class applied at the date of conclusion of the insurance contract:

	M
	1
	2
	3
	4
	5
	6
	7
Bonus – malus class	8
Donus – maius ciass	9
	10
	11
	12
	13
	14
	15
	16
	17

# INFORMATION on compulsory external MTPL insurance certificates

Green Card certificate number	area	Policy end date	Duration of insurance indicated in the "Green Card" certificate		premium received		Vehicle category (K <sub>1</sub> )	Terminated contract	Termination date
			from	to	MDL	Euro			
1	2	3	4	5	6	7	8	9	10
Total	X	X	X	X			X	X	X

# INFORMATION on claims paid on compulsory external MTPL insurance contracts

Green	Duration	Place of	Countr	Date of	Date of	Date of	Amount of		Vehicle
Card	of	accident,	y where	acciden	damag	payment of	compensatio		categor
certificat	insurance	insuranc	the	t	e	compensatio	n paid		$\mathbf{y}$
e number	indicated	e area	accident		report	n	MDL	Euro	
	in the		took						
	Green		place						
	Card								

	certifi e	cat								
	From	То								
1	2	3	4	5	6	7	8	9	10	11
Total	X	X	X	X	X	X	X			X

# INFORMATION on the amount of claims declared but not settled on compulsory external MTPL insurance contracts

Green Card certificate number	Duration of insurance indicated in the Green Card		of insurance indicated in the Green		Place of accident, insurance area	where	accident	Date of damage report	amou decla bu unse clai	int of ared ut ttled ims inding e end	Vehicle category
	from	to					MDL	Euro			
1	2	3	4	5	6	7	8	9	10		
Total	X	X	X	X	X	X			X		

#### **GUIDELINES FOR COMPLETION**

- 1. Tables shall be completed in Microsoft Excel format.
- 2. A separate file shall be submitted for each year.
- 3. If information regarding insurance policies, paid claims, and outstanding claims amounts is submitted in a format other than that set out in this Annex, the insurance undertaking shall resubmit the information as necessary until compliance is achieved.
- 4. The tables shall contain all data needed to calculate the base insurance premium.
- 5. The tables show the total policies issued and claims paid for the period 01.01.\_\_\_\_
   31.12.\_\_\_\_ and the estimated amount of claims reported but outstanding at the end of the reporting year.
- 6. The duration of the insurance, the date of termination, the date of the accident, the date of the damage report and the date of payment of the insurance claim shall be indicated in the following format DD.MM.YYYY.
- 7. The total amount of insurance premiums received, paid claims and the reserve for reported claims but not settled (outstanding at the end of the reporting year) shown in the tables shall correspond to the amount shown in the specialist reports submitted for the annual statements.
- 8. Areas and the place of accident shall be codified as follows: Area 1 Ukraine and Belarus 1. Area 2 Ukraine, Belarus and the Russian Federation 2. Area 3 all the countries of the Green Card system -3.
- 9. The column "Terminated contracts" shall indicate "YES", and for those not yet terminated "NO".

# 10. The category of the vehicle shall be codified as follows:

Vehicle category	Code
Vehicles	A
Lorries with a total mass up to 3.5 tonnes	C1
Lorries and tractors with a total mass exceeding 3,5 tonnes	C2
Vehicles used for the carriage of passengers with up to 17 seats, including the driver	E1
Vehicles used for the carriage of passengers and comprising more than 17 seats	E2
Motorcycles	В
Trailers	F
towed by vehicles (group A)	FA
towed by trucks (group C1 and C2)	F C
towed by minibuses and buses (group E1 and E2)	FΕ