

Automobile Insurance in Korea

Fact Book 2023



KIDI

Korea Insurance Development Institute

보험개발원

Automobile Insurance in Korea

Fact Book 2023

Forewords



Twenty years have passed since the Fact Book was first published in 2003. The Korea Insurance Development Institute (KIDI) believes the Fact Book has successfully introduced trends and changes in the Korean automobile insurance industry to our readers across the globe. I am deeply honored to announce the publication of this year's Fact Book, with the hope that it will continue to shed light on the Korean automobile insurance market.

In Korea, automobile insurance is considered one of the core business lines in the non-life (general) insurance sector, accounting for 16.7 percent of the entire non-life market.

In 2022, the number of cars insured with automobile insurance was 23.7 million, and the written insurance premiums totaled 19.8 trillion KRW (14.9 billion USD), showing an average annual growth rate of 2.5% and 4.5%, respectively, over the past five years.

In the meantime, the loss ratio of automobile insurance was 82.0 percent in 2022, increased by 1.0 percentage points compared to 2021. It shows that the loss ratio, which had improved due to a decrease in car operation and accident rates as a result of the impact of COVID-19, is increasing again following the endemic transition.

Fact Book 2023 contains various statistics that show the current situation of the Korean automobile insurance industry. We are confident the Fact Book will provide you with a comprehensive understanding of the Korean automobile insurance market.

KIDI always strives to provide specialized and professional service for insurers, customers, and supervisory authorities in Korea. We also want to become a responsible member of the global insurance industry.

Heo, Chang Eon
Chairman & CEO
Korea Insurance Development Institute

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Chapter 1 : The Korean Insurance Industry

In 2022, the Korean insurance industry reported an 11.7 percent increase in written premiums while GDP increased by 2.6 percent. Life insurance showed an 11.6 percent increase and non-life insurance increased by 11.7 percent in written premiums compared to 2021.

GDP and Insurance Industry Growth Rate

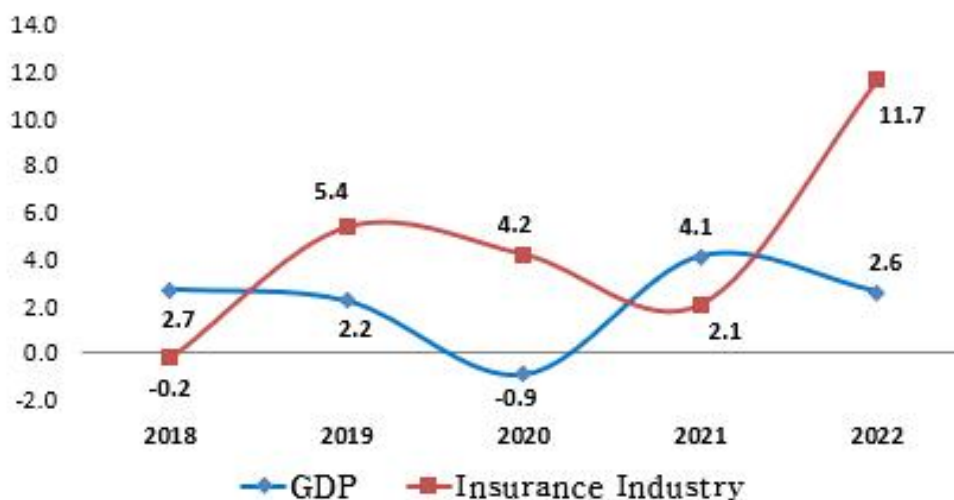
	2018	2019	2020	2021	2022
GDP	2.7	2.2	-0.9	4.1	2.6
Life ₁	-2.7	5.8	2.0	-0.6	11.6
Non-Life ₂	3.1	4.9	7.0	5.3	11.7
Insurance	-0.2	5.4	4.2	2.1	11.7

Note: ₁Written premiums in life Insurance, ₂Written premiums in non-life insurance

Source: KIDI, Monthly Insurance Statistics

Bank of Korea, Economic Statistics Yearbook

GDP and Insurance Industry Growth Rate, 2018~2022



The life insurance premiums to GDP ratio in 2022 was 6.1 percent, while the non-life insurance premiums to GDP ratio reached 5.5 percent in 2022.

Premiums as a percentage of GDP

	2018	2019	2020	2021	2022	%
Life	5.8	6.1	6.2	5.7	6.1	
Non-Life	4.7	4.9	5.2	5.1	5.5	
Total	10.6	11.0	11.4	10.9	11.6	

Sources: KIDI, Monthly Insurance Statistics

Bank of Korea - Main Annual Indicators (reference year 2015, 2000~)

In 2022, premiums per capita (insurance density) were 4,870 thousand won, increased by 11.9 percent compared to the previous year. In 2021, only Non-Life insurance had increased, but in 2022, both Life insurance and Non-Life insurance increased, respectively from 2,297 to 2,570, and from 2,055 to 2,300. The total amount of premiums per capita kept increasing due to the increase in the overall insurance industry.

Premiums Per Capita

	2018	2019	2020	2021	2022	Thousand won
Life	2,148	2,268	2,309	2,297	2,570	
Non-Life	1,743	1,825	1,950	2,055	2,300	
Total	3,891	4,093	4,260	4,352	4,870	

Note: Estimated population by Korea National Statistical Office

Source: KIDI, Monthly Insurance Statistics

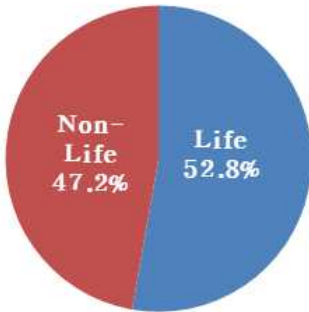
In 2022, written premiums in life insurance increased by 11.6 percent and written premiums in non-life insurance grew by 11.7 percent.

Written premiums

	2018	2019	2020	2021	2022	Billion won
Life	110,843	117,262	119,587	118,849	132,684	
Non-Life	89,971	94,386	100,995	106,337	118,769	
Total	200,814	211,648	220,582	225,186	251,453	

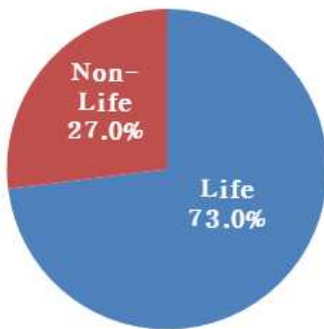
Source: KIDI, Monthly Insurance Statistics

**Written premiums of Life
& Non-Life Insurance**



- In 2022, the share of written premiums for life insurance was 52.8 percent and the share of written premiums for non-life insurance was 47.2 percent.

**Total Asset of Life &
Non-Life Insurance**



- In 2022, the share of the total asset size of life insurance was 73.0 percent and the share of the total asset size of non-life insurance was 27.0 percent.

In 2022, the asset size of each insurance recorded 1,310 trillion won, of which Life and Non-life insurance accounted for 938 trillion won and 372 trillion won each. Non-life insurance increased by 1.6 percent, while Life insurance decreased by 5.4 percent.

Total Asset

	2018	2019	2020	2021	2022
	Trillion won, %				
Life	857 2.9	918 7.1	977 6.4	992 1.5	938 -5.4
Non-Life	298 7.6	321 7.7	344 7.2	366 6.4	372 1.6
Total	1,155 4.1	1,239 7.3	1,321 6.6	1,358 2.8	1,310 -3.5

Note: Figures in the parentheses indicate annual growth rate

Source: General Insurance Association Of Korea, Monthly Insurance Statistics

Life Insurance Association Of Korea, Monthly Insurance Statistics

There are 23 life insurance companies and 33 non-life insurance companies in Korea. 21 out of 33 non-life insurance companies are not involved in the automobile insurance business (The majority of them are reinsurers).

Number of Insurance Companies

Life Insurance	Non-Life Insurance	Auto	Non-Auto
Hanwha Life Insurance Co., Ltd.	Meritz Fire & Marine Insurance Co., Ltd.	○	○
Samsung Life Insurance Co., Ltd.	Hanwha Non-life Insurance Co., Ltd.	○	○
Heungkuk Life Insurance Co., Ltd.	Lotte Non-life Insurance Co., Ltd.	○	○
Kyobo Life Insurance Co., Ltd.	MG Non-life Insurance Co., Ltd.	○	○
Hyundai Life Co., Ltd.	Heungkuk Fire & Marine Insurance Co., Ltd.	○	○
Shinhan Life Insurance Co., Ltd.	Samsung Fire & Marine Insurance Co., Ltd.	○	○
DGB Life Insurance Co., Ltd.	Hyundai Marine & Fire Insurance Co., Ltd.	○	○
KDB Life Insurance Ltd.	KB Insurance Co., Ltd.	○	○
Mirae Asset Life Insurance Co., Ltd.	DB Insurance Co., Ltd.	○	○
KB Life Insurance Ltd.	Seoul Guarantee Insurance Company	×	○
DB Life Insurance Co., Ltd.	Korean Re Insurance Company	×	○
Dongyang Life Insurance Co., Ltd.	American Insurance Group, Inc.	×	○
BNP PARIBAS CARDIF Life Insurance Co., Ltd.	ACE American Fire & Marine Insurance Company Korea	×	○
Hana Life Insurance Co., Ltd.	First American Title Company Korea Branch	×	○
Fubon Hyundai Life Insurance Co., Ltd.	Mitsui Sumitomo Insurance Co., Ltd.	×	○
ABL Life Insurance Co., Ltd.	DAS Legal Expenses Insurance Co., Ltd.	×	○
MetLife Insurance Company of	AXA General Insurance Co., Ltd.	○	○
Chubb Life Insurance Korea Co., Ltd.	HANA Non-life Insurance Co., Ltd.	○	○
LINA Life Insurance Co., Ltd.	CARROT Non-life Insurance Co., Ltd.	○	○

American International Assurance	KAKAOPAY Non-life Insurance Co., Ltd.	x	○
IBK Pension Insurance	Shinhan EZ General Insurance Co., Ltd.	x	○
NongHyup Life Insurance Co., Ltd	General Re Insurance Company Korea	x	○
Kyobo Lifeplanet Insurance Company	Swiss Re Insurance Company Korea	x	○
	Munich Re Insurance Company Korea	x	○
	Tokio Marine & Nichido Fire Insurance Co., Ltd.	x	○
	SCOR Re Insurance Company Korea	x	○
	RGA Re Insurance Company Korea	x	○
	Hannover Re Insurance Company Korea	x	○
	Pacific Life Re Limited Korea Branch	x	○
	Asia Capital Reinsurance Group Co Korea Branch	x	○
	NongHyup Property & Casualty Insurance Co., Ltd.	x	○
	Allianz Global Corporate & Specialty South Korea	x	○
	Factory & Mutual Insurance Co Korea Branch	x	○

Note : ○ → In business, x → Not in business

The number of employees and solicitors hired by non-life insurance companies is approximately 1.9 times more than the number of those hired by life insurance companies. Moreover, non-life insurance companies have 4.8 times more agencies than life insurance companies have.

Employee and Distribution Channel by Insurance Business

	number, persons			
	Branch Offices	Employees	Solicitors	Agencies
Life	2,054	22,386	77,694	6,126
Non-Life	2,772	32,708	148,695	29,197

Note: Number of dependent sales agents on the basis of registration

Source: Financial Supervisory Service(FSS), Financial Statistics

Chapter 2 : Non-Life Insurance Market

1. Written premiums and Incurred Loss by Line of Business

In the non-life insurance market, the total amount of written premiums had grown from 89,971 billion won in 2018 to 118,769 billion won in 2022. The growth of written premiums in 2022 was mainly due to the expansion of Long-term and Others2. insurance.

Written premiums By Line of Business

	Billion won												
	Automobile	%	Long-term	%	Guarantee	%	Marine	%	Fire	%	Others	%	Total
2018	15,839	-1.4	54,086	2.5	1,701	12.7	591	-7.7	272	-7.2	17,482	9.3	89,971
2019	16,649	5.1	53,095	-1.8	1,641	-3.5	598	1.2	269	-1.0	18,844	7.8	94,386
2020	18,573	11.6	55,922	5.3	1,705	3.9	700	17.1	274	1.7	23,822	26.4	100,995
2021	19,284	3.8	58,834	5.2	1,722	1.0	740	5.8	316	15.5	25,441	6.8	106,337
2022	19,863	3.0	61,798	5.0	1,802	4.6	872	17.8	318	0.6	34,118	34.1	118,769

Note: 1. Annuity is included in long-term insurance

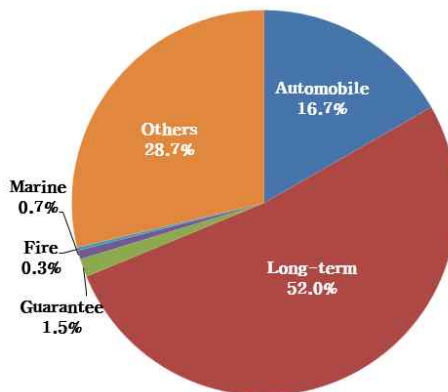
2. Others include casualty, personal accident, retirement insurance and etc.

3. % refers to annual change

Source: KIDI, Monthly Insurance Statistics, Monthly Auto Insurance Statistics(Automobile)

- In 2022, the amount of written premiums in long-term insurance reached 6.2 trillion won, which accounted for 52.0 percent of the non-life insurance market.
- Automobile insurance came second with 19.9 trillion won (16.7%), followed by Guarantee insurance with 1.5 percent and Marine with 0.7 percent.

Written premiums by Line of Business



In 2022, long-term insurance and automobile insurance recorded high loss ratios of 82.5 percent and 82.0 percent each, while guarantee insurance showed relatively low incurred loss ratios of 43.2 percent. Loss ratios of long-term insurance had been stable, ranging from 82 to 85 percent for the past five years compared to the ones in guarantee, marine, and fire insurance.

<u>Automobile</u>				<u>Long-term</u>			
	Billion won, %				Billion won, %		
	EP ₁	IL ₂	L/R		EP ₁	IL ₂	L/R
2018	15,721	13,512	85.9	2018	52,764	44,421	84.2
2019	16,094	14,709	91.4	2019	54,902	46,787	85.2
2020	17,351	14,806	85.3	2020	57,410	48,543	84.6
2021	18,775	15,216	81.0	2021	59,593	50,449	84.7
2022	19,435	15,934	82.0	2022	62,260	51,365	82.5

<u>Guarantee</u>				<u>Marine</u>			
	Billion won, %				Billion won, %		
	EP ₁	IL ₂	L/R		EP ₁	IL ₂	L/R
2018	1,415	663	46.8	2018	284	187	65.6
2019	1,502	911	60.7	2019	277	198	71.6
2020	1,522	1,021	67.1	2020	295	243	82.3
2021	1,577	742	47.0	2021	326	154	47.1
2022	1,639	709	43.2	2022	389	229	58.9

<u>Fire</u>				<u>Others</u>			
	Billion won, %				Billion won, %		
	EP ₁	IL ₂	L/R		EP ₁	IL ₂	L/R
2018	259	132	51.0	2018	8,112	5,903	72.8
2019	240	155	64.4	2019	8,917	6,556	73.5
2020	226	187	82.8	2020	9,310	7,006	75.2
2021	239	144	60.4	2021	9,907	7,451	75.2
2022	242	170	70.4	2022	11,404	8,772	76.9

Note: ₁Earned Premiums, ₂Incurred Losses

Annuity / Retirement insurance is included in the Long-term insurance

Loss Adjustment Expenses are excluded

Source: FSS, Financial Statistics, Monthly Auto Insurance Statistics(Automobile)

The "Big Four" companies (Samsung, Hyundai, DB, and KB) accounted for 66.8 percent of the total written premiums in the non-life insurance market. In 2022, Samsung F&M took the largest market share, 22.4 percent, followed by DB Insurance at 16.0 percent, Hyundai M&F at 15.1 percent, and KB Insurance at 13.3 percent.

Written premiums and Market Share by Non-Life Insurance Company

Company	Written premiums	Share(%)
Samsung	24,069	20.3
DB	19,006	16.0
Hyundai	17,879	15.1
KB	15,835	13.3
Meritz	17,668	14.9
Lotte	4,761	4.0
Hanwha	6,089	5.1
Nonghyup	4,193	3.5
Heungkuk	3,199	2.7
SGIC	1,794	1.5
MG	1,161	1.0
AXA	858	0.7
AIG	645	0.5
Hana	555	0.5
Others	757	0.3
Total	118,769	100.0

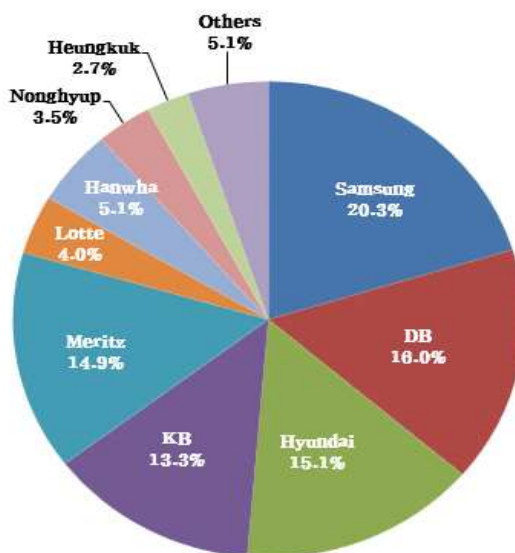
Billion won

Note: 1. Others include Shinhan EZ, Ace American, First American, Mitsui Sumitomo, Korean Re and Carrot, KaKaopay

2. Ceded and assumed premiums are excluded in Written premiums

Source: KIDI, Monthly Insurance Statistics

Written premiums by Insurance Company



Note: Others include Shinhan EZ, Ace American, First American, Mitsui Sumitomo, Korean Re, MG, AIG, SGIC, Hana and Carrot, KaKaopay

2. Non-Life Insurance Expense by Line of Business

In 2022, as shown in the table below, expenses incurred by the others insurance increased by 14.0 percent, compared to the previous year, while expenses of marine, guarantee, long-term, automobile, and fire insurance increased by 9.0 percent, 7.6 percent, 4.5 percent, 3.0 percent and 2.7 percent accordingly.

Expenses by Line of Business

	Billion won												
	Automobile	%	Long-term	%	Guarantee	%	Marine	%	Fire	%	Others	%	Total
2018	2,845	-5.1	11,514	10.1	295	13.4	104	6.0	119	-2.7	1,862	5.3	16,740
2019	2,807	-1.3	12,995	12.9	244	-17.3	101	-2.9	113	-5.0	2,075	11.4	18,334
2020	2,885	2.8	13,123	1.0	261	6.9	92	-8.3	114	1.0	2,116	2.0	18,591
2021	3,079	6.7	12,885	-1.8	292	12.2	103	12.0	121	5.5	2,208	4.3	18,687
2022	3,170	3.0	13,466	4.5	314	7.6	113	9.0	124	2.7	2,517	14.0	19,704

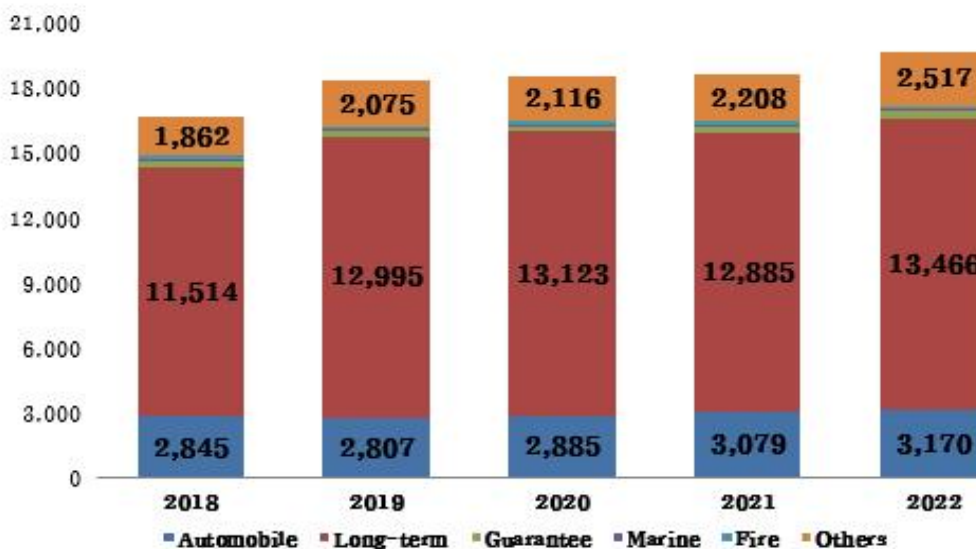
Note: 1. Long-term insurance includes Annuity

2. % refers to annual growth change

3. Claim survey fee is excluded in operating expenses in accordance with IFRS basis

Source: FSS, Financial Statistics

Trends in Expense by Line of Business



Among non-life insurance, long-term and automobile insurance had constantly been in deficit for a long time.

Underwriting Results by Line of Business

	Billion won												
	Automobile	%	Long-term	%	Guarantee	%	Marine	%	Fire	%	Others	%	Total
2018	-725	-181.1500	-3,171	-14.6	457	-6.7	-6	-119.1	7	-25.5	347	-16.8	-3,091
2019	-1,655	-128.3	-4,879	-53.9	347	-24.1	-22	-266.7	-28	-300.0	287	-17.3	-5,951
2020	-384	76.8	-4,256	12.8	241	-30.5	-40	-81.1	-76	-171.9	189	-34.2	-4,327
2021	391	201.8	-3,741	12.1	543	125.3	69	271.9	-26	65.5	248	31.5	-2,516
2022	433	10.7	-2,571	31.3	616	13.5	47	-31.8	-52	-100.8	115	-53.7	-1,413

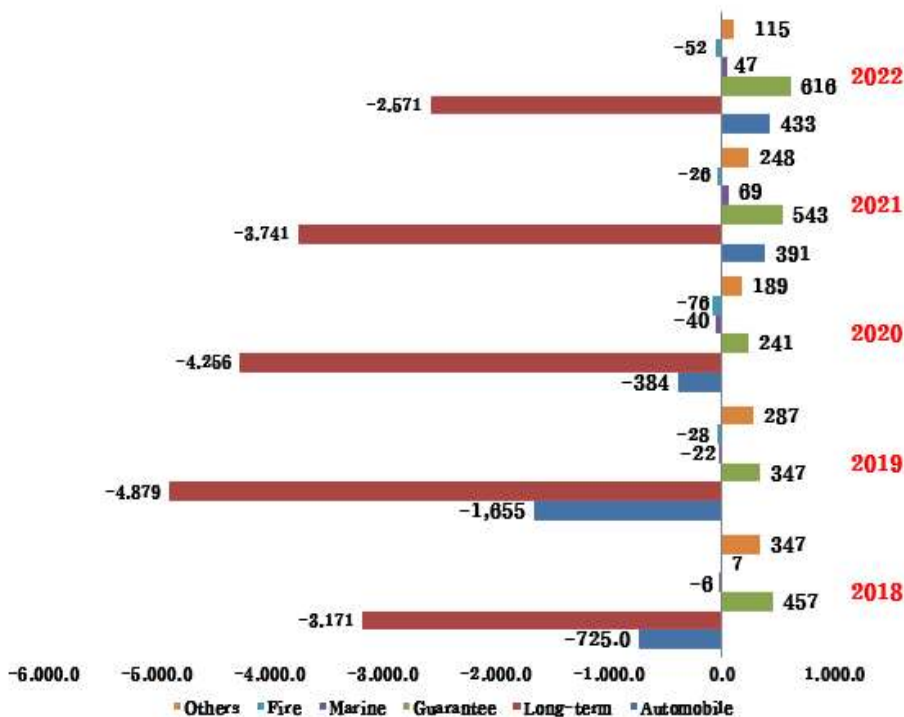
Note: 1. Long-term insurance includes Annuity

2. Underwriting results(Operating income) = earned premiums - incurred losses - net expenses

3. % refers to the annual growth rate

Source: FSS, Financial Statistics, KIDI, Automobile Insurance Yearbook

Trends in U/W Results by Line of Business



Chapter 3 : The Korean Automobile Insurance Market

1. Number of Registered Vehicles

The number of registered vehicles has constantly increased for the past five years. Last year, the number of vehicle registrations grew by 2.4 percent, 2.2 percent for personal vehicles, and 4.1 percent for commercial vehicles respectively. The growth rate increased from 2.2 percent to 2.4 percent in 2022.

Number of Registered Vehicles

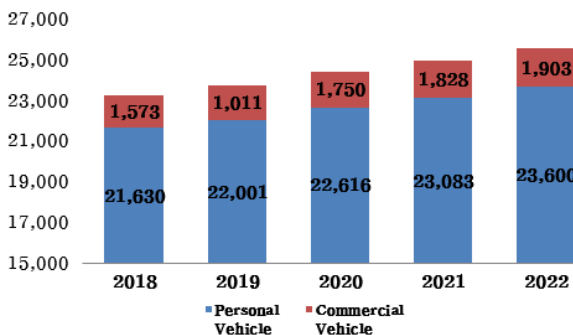
	2018	2019	2020	2021	2022
	Thousand, %				
Personal Vehicle	21,630	22,001	22,616	23,083	23,600
	2.7	1.7	2.8	2.1	2.2
Commercial Vehicle	1,573	1,677	1,750	1,828	1,903
	7.9	6.6	4.4	4.5	4.1
Total	23,203	23,677	24,366	24,911	25,503
	3.0	2.0	2.9	2.2	2.4

Note: 1. Numbers in each second rows of the vehicles indicate the annual growth change
 2. Motorcycles are excluded

Source: Ministry of Land, Infrastructure and Transport(MOLIT)

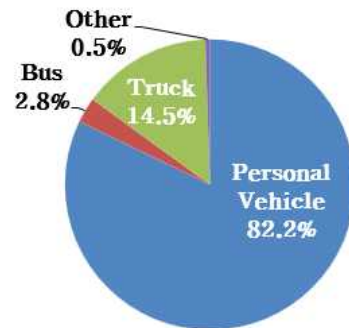
As shown in the pie chart below, personal vehicles took the largest market share with 82.2 percent in 2022, followed by trucks with 14.5 percent, and buses with 2.8 percent.

Trends in number of registered vehicles



Note: Motorcycles are excluded
 Source: MOLIT

Types of Vehicles



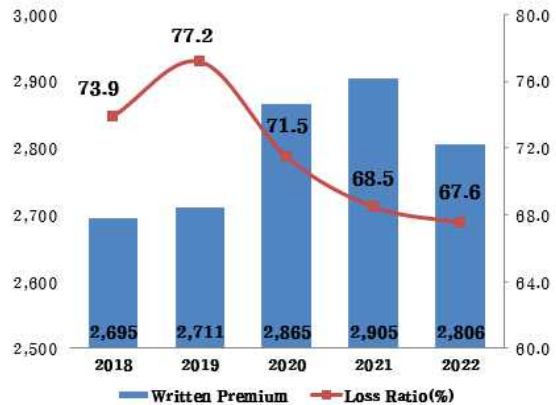
Note: Motorcycles are excluded
 Source: MOLIT

2. Written premiums and Incurred Losses

In 2022, written premiums of Bodily Injury Liability Coverage I recorded 2,806 billion won. The loss ratio decreased from 68.5 percent to 67.6 percent in 2022.

Billion won, %				
Bodily Injury Liability Coverage I				
	Written premiums	Earned premiums	Incurred Losses	Loss ratio
2018	2,695	2,698	1,994	73.9
2019	2,711	2,677	2,066	77.2
2020	2,865	2,762	1,974	71.5
2021	2,905	2,879	1,972	68.5
2022	2,806	2,863	1,934	67.6

WP and L/R of Bodily Injury I

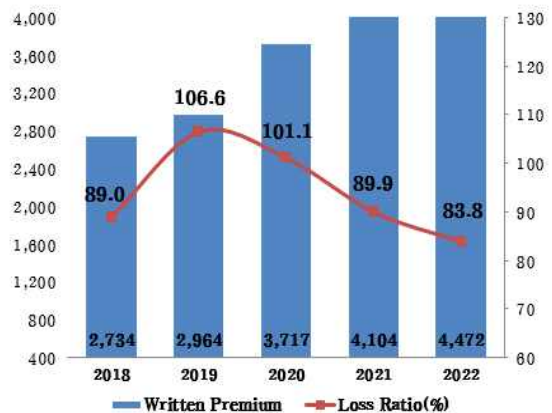


Note: Loss Adjustment Expenses are excluded
Source: KIDI, Monthly Automobile Statistics

Written premiums of Bodily Injury Liability Coverage II were 4,472 in 2022. The loss ratio decreased in 2022, reaching 83.8 percent.

Billion won, %				
Bodily Injury Liability Coverage II				
	Written premiums	Earned premiums	Incurred Losses	Loss ratio
2018	2,734	2,618	2,330	89.0
2019	2,964	2,815	3,000	106.6
2020	3,717	3,232	3,268	101.1
2021	4,104	3,878	3,486	89.9
2022	4,472	4,228	3,542	83.8

WP and L/R of Bodily Injury II

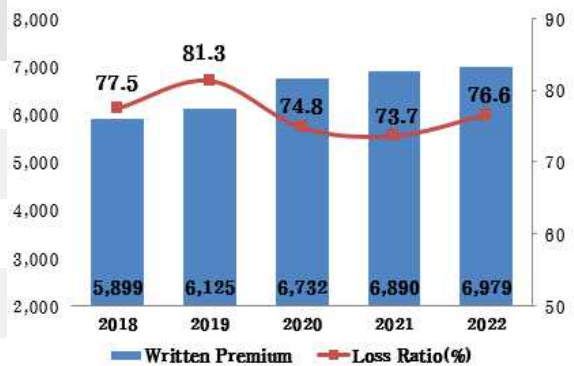


Note: Loss Adjustment Expenses are excluded
Source: KIDI, Monthly Automobile Statistics

Written premiums of Property Damage were 6,979 billion won, increased by 1.3 percent compared to the previous year. The loss ratio of property damage liability had improved from 2019 to 2021 but started to become worse.

Billion won, % **WP and L/R of Property Damage Liability**

	Property Damage Liability Coverage			
	Written premiums	Earned premiums	Incurred Losses	Loss ratio
2018	5,899	5,912	4,580	77.5
2019	6,125	5,948	4,838	81.3
2020	6,732	6,361	4,760	74.8
2021	6,890	6,754	4,976	73.7
2022	6,979	6,923	5,303	76.6

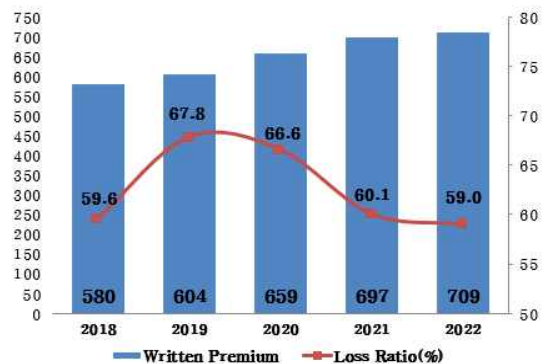


Note: Loss Adjustment Expenses are excluded
Source: KIDI, Monthly Automobile Statistics

Earned premiums of Expanded Medical Payments Coverage increased by 10 billion won, and the loss ratio decreased by 1.1 percentage points in 2022. The loss ratio started to show a downward trend in 2020.

Billion won, % **WP and L/R of Expanded Medical Payments**

	Expanded Medical Payments Coverage			
	Written premiums	Earned premiums	Incurred Losses	Loss ratio
2018	580	584	348	59.6
2019	604	581	394	67.8
2020	659	625	416	66.6
2021	697	669	402	60.1
2022	709	703	415	59.0

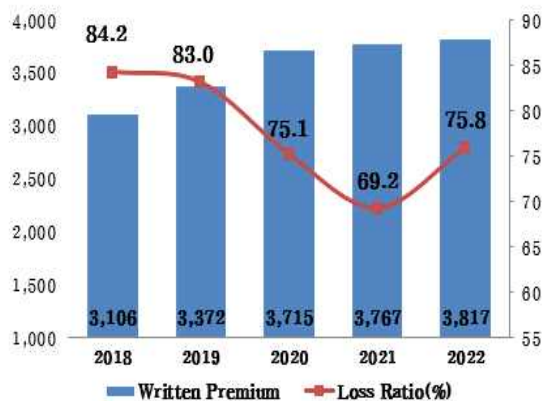


Note: Loss Adjustment Expenses are excluded
Source: KIDI, Monthly Automobile Statistics

Written premiums for Physical Damage Coverage were 3,817 billion won, which was an increase of 50 billion won compared to the previous year. The loss ratio also increased by 6.6 percentage points in 2022.

Physical Damage Coverage				
	Written premiums	Earned premiums	Incurred Losses	Loss ratio
2018	3,106	3,091	2,602	84.2
2019	3,372	3,213	2,668	83.0
2020	3,715	3,500	2,629	75.1
2021	3,767	3,695	2,556	69.2
2022	3,817	3,801	2,882	75.8

WP and L/R of Physical Damage

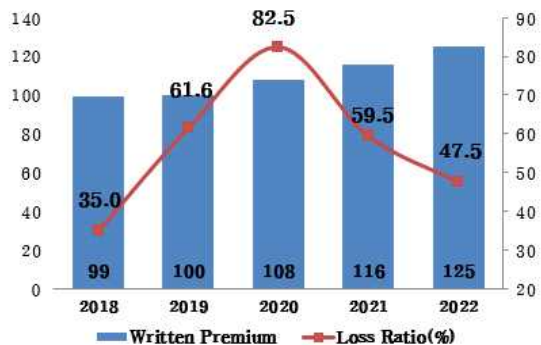


Note: Loss Adjustment Expenses are excluded
Source: KIDI, Monthly Automobile Statistics

Written premiums for Uninsured Motorist Coverage had not been stable for the last five years. The loss ratio decreased from 59.5 percent to 47.5 percent in 2022.

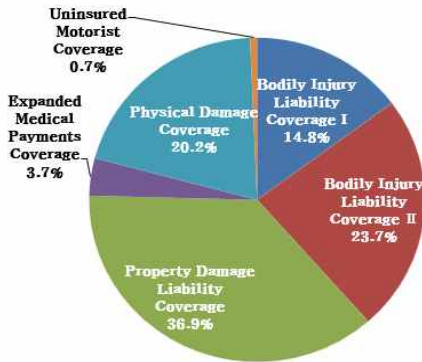
Uninsured Motorist Coverage				
	Written premiums	Earned premiums	Incurred Losses	Loss ratio
2018	99	100	35	35.0
2019	100	99	61	61.6
2020	108	103	85	82.5
2021	116	111	66	59.5
2022	125	120	57	47.5

WP and L/R of Uninsured Motorist



Note: Loss Adjustment Expenses are excluded
Source: KIDI, Monthly Automobile Statistics

Written premiums by Coverage



- Property Damage, being 36.9 percent, took the largest share of written premiums by coverage, followed by Bodily Injury II at 23.7 percent and Physical Damage at 20.2 percent.
- The sum of ratios for Property Damage Liability Coverage and Physical Damage Coverage is 57.1 percent, accounting for more than half of its total loss.

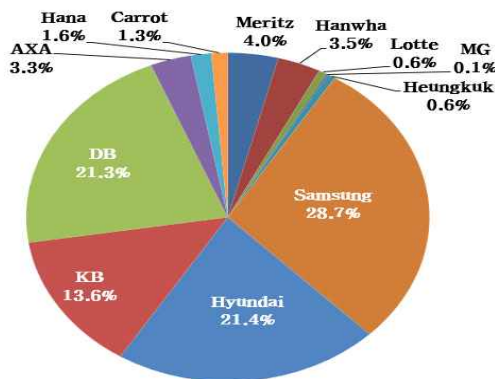
Written premiums by Insurance Company, 2018~2022

Company	2018		2019		2020		2021		2022	
	Value	M/S	Value	M/S	Value	M/S	Value	M/S	Value	M/S
Meritz F&M	747	4.8	618	3.7	663	3.7	763	4.0	793	4.0
Hanwha Non-life Insurance	827	5.3	812	4.9	765	4.9	701	3.7	679	3.5
Lotte Non-life Insurance	454	2.9	417	2.5	220	2.5	175	0.9	127	0.6
MG Non-life Insurance	32	0.2	39	0.2	39	0.2	29	0.2	24	0.1
Heungkuk F&M	134	0.9	134	0.8	148	0.8	135	0.7	126	0.6
Samsung F&M	4,485	28.5	4,871	29.5	5,466	29.5	5,572	29.1	5,623	28.7
Hyundai M&F	3,186	20.3	3,366	20.4	3,847	20.4	4,038	21.1	4,188	21.4
KB Insurance	1,925	12.2	2,086	12.6	2,468	12.6	2,511	13.1	2,663	13.6
DB Insurance	3,056	19.4	3,295	19.9	3,810	19.9	4,032	21.1	4,169	21.3
AXA Non-life Insurance	589	3.7	598	3.6	655	3.6	701	3.7	643	3.3
Hana Non-life Insurance	287	1.8	291	1.8	294	1.8	328	1.7	320	1.6
Carrot Non-life Insurance	-	-	-	-	23	0.1	141	0.7	256	1.3
Total	15,721	100.0	16,527	100.0	18,398	100.0	19,125	100.0	19,610	100.0

Source: KIDI, Monthly Automobile Insurance Statistics

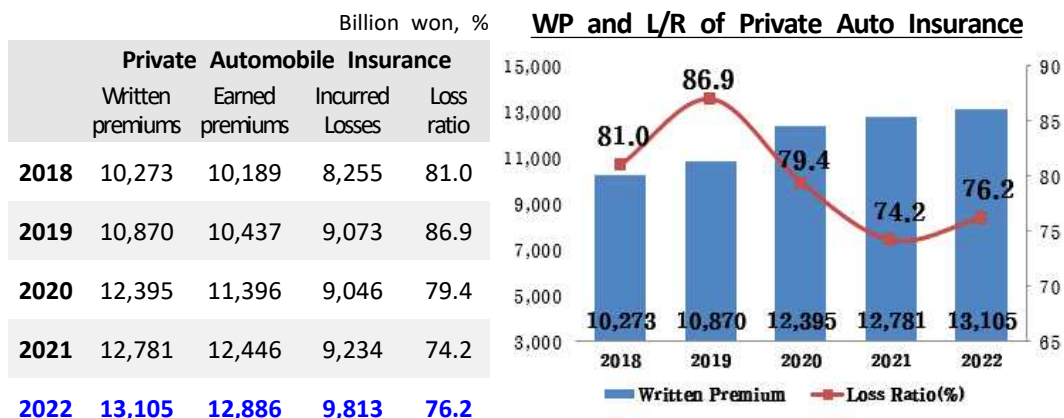
Note: Written Premiums do not cover Driver's Insurance, Insurance in Foreign currency and etc.

Market Share : Written premiums



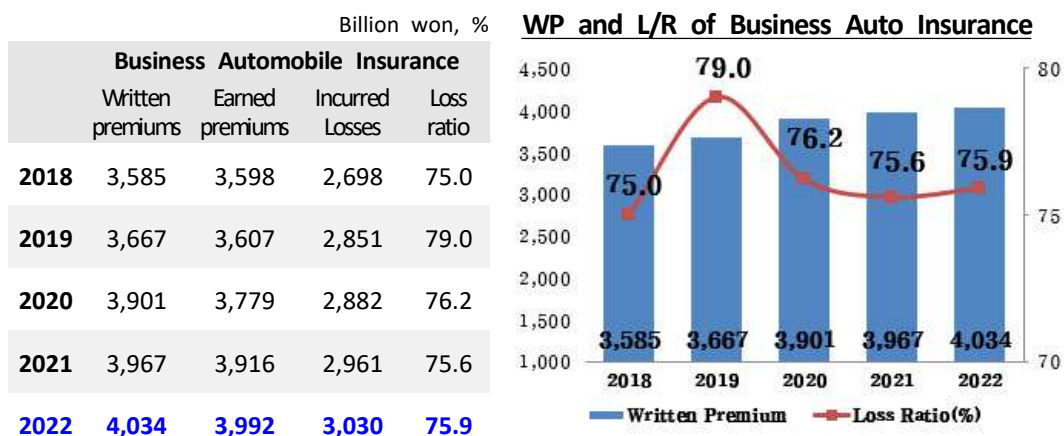
3. Written premiums and Incurred Losses by Line of Automobile Insurance

Written premiums in private automobile insurance increased by 2.5 percent, reaching 13,105 billion won in 2022. The loss ratio in private automobile insurance had been constantly decreasing from 2019 to 2021. However, the loss ratio worsened again by 2 percentage points in 2022



Note: Loss Adjustment Expenses are excluded
Source: KIDI, Monthly Automobile Statistics

Written premiums in business automobiles also increased by 1.7 percent, reaching 4,034 billion won in 2022. The loss ratio increased by 0.3 percentage points compared to the previous year and reached 75.9 percent in 2022.

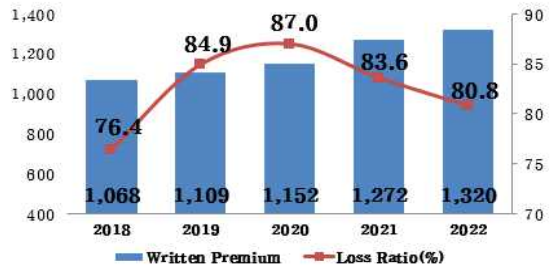


Note: Loss Adjustment Expenses are excluded
Source: KIDI, Monthly Automobile Statistics

Written premiums in commercial automobile insurance reached 1,320 billion won in 2022, which is a 3.8 percent increase compared to the previous year. The loss ratio decreased by 2.8 percentage points, reaching 80.8 percent in 2022.

Billion won, % **WP and L/R of Commercial Auto Insurance**

Commercial Automobile Insurance				
	Written premiums	Earned premiums	Incurred Losses	Loss ratio
2018	1,068	1,030	787	76.4
2019	1,109	1,081	918	84.9
2020	1,152	1,119	973	87.0
2021	1,272	1,214	1,015	83.6
2022	1,320	1,294	1,046	80.8

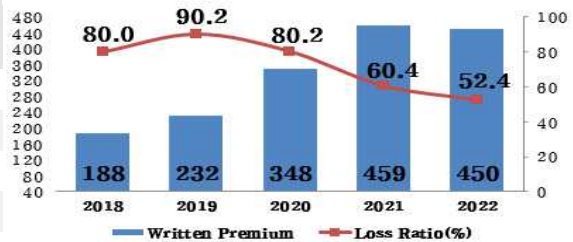


Note: Loss Adjustment Expenses are excluded
Source: KIDI, Monthly Automobile Statistics

Written premiums in motorcycle insurance recorded 450 billion won, and the loss ratio of motorcycle insurance was 52.4 percent in 2022.

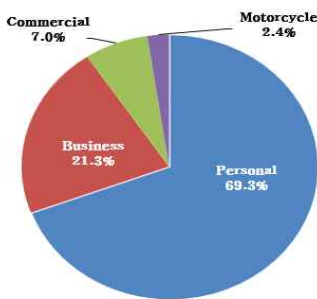
Billion won, % **WP and L/R of Motorcycle Insurance**

Motorcycle Insurance				
	Written premiums	Earned premiums	Incurred Losses	Loss ratio
2018	188	186	149	80.0
2019	232	207	186	90.2
2020	348	288	231	80.2
2021	459	409	247	60.4
2022	450	466	244	52.4



Note: Loss Adjustment Expenses are excluded
Source: KIDI, Monthly Automobile Statistics

Written premiums by Line of Automobile insurance



- Private automobile insurance, with a total of 69.3 percent, took the largest share of written premiums, followed by business automobile insurance at 21.3 percent, commercial automobile insurance at 7.0 percent, and motorcycle insurance at 2.4 percent.

4. Accident Statistics

4-1. General Accident

The number of car accidents decreased by 3.1 percent and the number of registered vehicles increased by 2.4 percent in 2022. As a result, the accident rate in 2022 was 0.8 percent, which is the same as the accident rate in 2021.

Accident Number and Accident rate

	Number of Accidents	Annual change	Accident rate	Number of Registered Vehicles	Annual change
					Cases, %
2018	217,148	0.4	0.9	23,202,555	3.0
2019	229,600	5.7	1.0	23,677,366	2.5
2020	209,664	-8.7	0.9	24,365,979	2.9
2021	203,130	-3.1	0.8	24,911,101	2.2
2022	196,836	-3.1	0.8	25,503,078	2.4

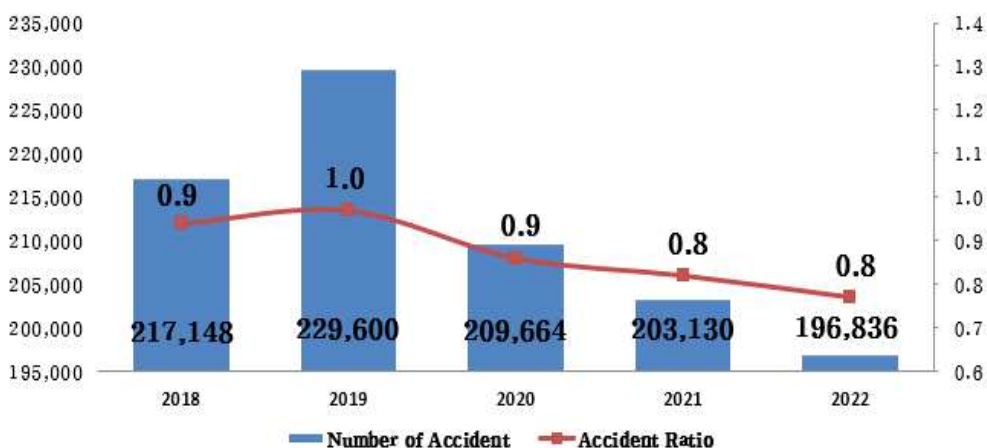
Note: 1. Annual change refers to the growth rate compared to the previous year

2. Motorcycles are excluded from the number of registered vehicles

3. The number of registered vehicles is accumulated at the end of the year

Source: National Police Agency(NPA), Traffic Accident Statistics

Trends in Number of Accident and Accident Rate



Source: NPA, Traffic Accident Statistics

The number of accidents per 10,000 registered vehicles was 67.2 cases in 2022, which is a decrease of 8.6 percent compared to the previous year.

Accident Numbers per 10,000 registered vehicles

	2018	2019	2020	2021	Cases, % 2022
# of Accidents	80.4 (-6.4)	83.5 (3.9)	74.2 (-11.1)	73.5 (-1.0)	67.2 (-8.6)

Note: 1. Figures in the parentheses indicate annual growth rates
 2. Motorcycles are included
 3. Construction machinery and farm machinery are included since 2005
 Source: NPA, Traffic Accident Statistics

The number of deaths by traffic accidents was 2,735 and the number of injuries was 281,803 in 2022. The number of deaths by traffic accidents had shown a downward trend since 2018. Fatalities per 100,000 residents continued to fall from 7.3 persons in 2018 to 5.3 persons in 2022. The number of injuries per 100,000 residents also declined to 545.8 in 2022.

Number of Deaths and Injuries

	Persons	
	Number of Deaths	Number of Injuries
2018	3,781	323,037
2019	3,349	341,712
2020	3,081	209,654
2021	2,916	291,608
2022	2,735	281,803

Source: NPA, Traffic Accident Statistics

Number of Deaths and Injuries per 100,000 Population

	Persons	
	Number of Deaths	Number of Injuries
2018	7.3	625.6
2019	6.5	660.8
2020	6.0	591.3
2021	5.6	562.7
2022	5.3	545.8

Source: NPA, Traffic Accident Statistics

As shown in the table below, the total number of accidents by traffic violations decreased in 2022 to 196,836 cases. Careless driving was a major reason for traffic violations, accounting for 56.5 percent. In 2022, traffic light violations decreased by 7.1 percent compared to 2021 and careless driving decreased by 0.4 percent compared to the previous year.

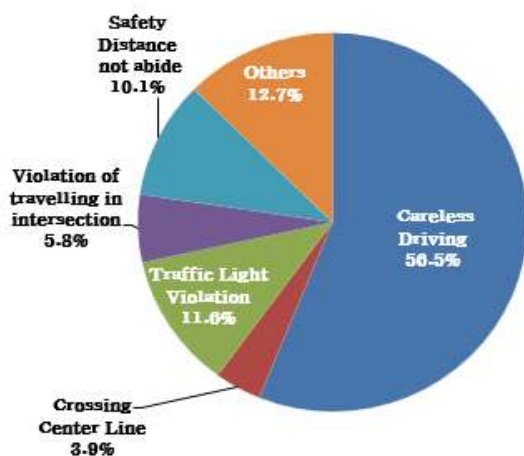
Accident Number by Traffic Violation

	Cases												
	Careless Driving	%	Crossing Center Line	%	Traffic Light Violation	%	Violation of travelling in intersection	%	Safety Distance not abide	%	Others	%	Total
2018	121,797	56.1	9,559	4.4	24,725	11.4	14,064	6.5	20,453	9.4	26,550	12.2	217,148
2019	126,006	54.9	9,344	4.1	27,921	12.2	15,372	6.7	22,473	9.8	28,484	12.4	229,600
2020	116,272	55.5	8,364	4.0	24,512	11.7	14,079	6.7	21,469	10.2	24,947	11.9	209,643
2021	111,766	55.0	8,524	4.2	24,608	12.1	12,218	6.0	21,045	10.4	24,969	12.3	203,130
2022	111,307	56.5	7,710	3.9	22,850	11.6	11,453	5.8	19,900	10.1	24,969	12.7	196,836

Note: % indicates the share of accidents by the traffic violation

Source: NPA, Traffic Accident Statistics

Share of Accidents by Traffic Violation



- In 2022, Careless Driving was the major cause of traffic violations, accounting for 56.5 percent.
- Traffic Light Violation came second at 11.6 percent, followed by Safety Distance not Abide at 10.1 percent, and Intersection Violation at 5.8 percent.

In 2022, the number of traffic accidents by drunk drivers was 15,059, an increase of 1.1 percent from the previous year. The percentage of drinking and driving accidents was 7.7 percent of total traffic accidents.

Accident Number of Traffic Accidents by Drunk Driver

	Cases, %				
	2018	2019	2020	2021	2022
Number	19,381	15,708	17,247	14,894	15,059
Rate ₁	8.9	6.8	8.2	7.3	7.7

Note: ₁Share of accidents by drunk drivers

Source: NPA, Traffic Accident Statistics

The number of traffic accidents by unlicensed drivers was 5,066, 2.6 percent of the total number of traffic accidents in 2022. The share of traffic accidents by unlicensed drivers increased by 0.3 percentage compared to 2021.

Number of Traffic Accidents by Unlicensed Drivers

	2018	2019	2020	2021	Cases, % 2022
Number	5,203	5,177	5,307	4,628	5,066
Rate ₁	2.4	2.3	2.5	2.3	2.6

Note: ₁Share of accidents by unlicensed drivers

Source: NPA, Traffic Accident Statistics

The number of traffic accidents by hit-and-run drivers was 6,778 accounting for 3.4 percent of the total number of traffic accidents in 2022. The share of traffic accidents by hit-and-run drivers had decreased from 3.5 percent in 2018 to 3.4 percent in 2022.

Number of Traffic Accidents by Hit-and-Run Drivers

	2018	2019	2020	2021	Cases, % 2022
Number	7,601	7,129	7,418	7,492	6,778
Rate ₁	3.5	3.1	3.5	3.7	3.4

Note: ₁Share of accidents by hit-and-run drivers

Source: NPA, Traffic Accident Statistics

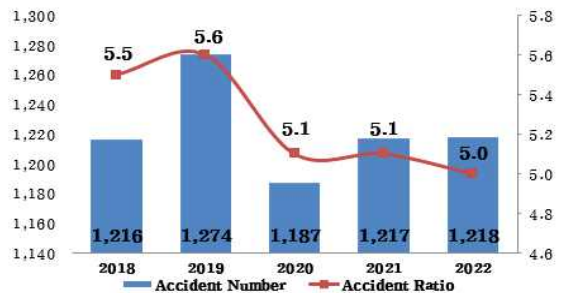
4-2. Insurance Accident by Coverage

Both the number of vehicles(incident involved) and the number of accidents in Bodily Injury I (BI I) increased compared to the previous year. The accident rate stayed the same at 5.0 percent, while the number of accidents was almost the same as in 2021.

Bodily Injury I Accident Rate

	Vehicle ₁	Case ₂	Rate ₃
2018	22,153	1,216	5.5
2019	22,732	1,274	5.6
2020	23,263	1,187	5.1
2021	23,931	1,217	5.1
2022	24,489	1,218	5.0

BI I: Accident Number & Accident Rate



Note: ₁Number of insured vehicles per year, ₂Number of accidents, ₃Accident rate

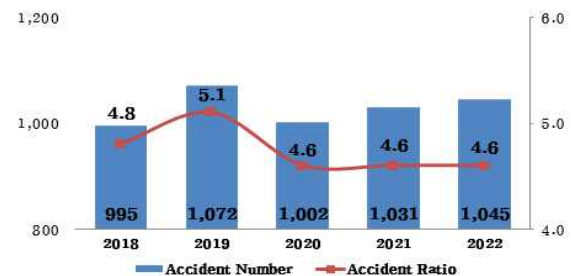
Source: KIDI, Annual Automobile Insurance Statistics

The number of accidents in Bodily Injury II started to increase from 2020. The accident rate stayed the same at 4.6 percent.

Bodily Injury II Accident Rate

	Vehicle ₁	Case ₂	Rate ₃
2018	20,582	995	4.8
2019	21,137	1,072	5.1
2020	21,599	1,002	4.6
2021	22,211	1,031	4.6
2022	22,761	1,045	4.6

BI II: Accident Number & Accident Rate



Note: ₁Number of insured vehicles per year, ₂Number of accidents, ₃Accident rate

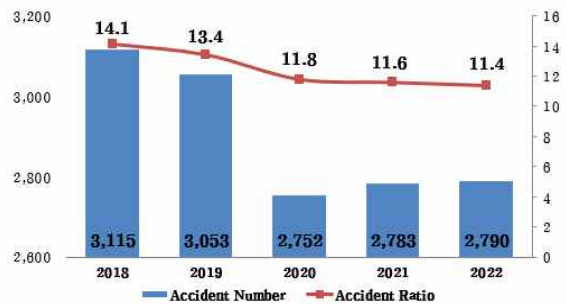
Source: KIDI, Annual Automobile Insurance Statistics

The accident rate of Property Damage decreased by 0.2 percentage points in 2022. The number of accidents recorded 2,790 thousand cases, an increase of 0.3 percent compared to the previous year.

Property Damage Accident Rate

	Vehicle ₁	Case ₂	Rate ₃
			Thousands, %
2018	22,152	3,115	14.1
2019	22,728	3,053	13.4
2020	23,256	2,752	11.8
2021	23,934	2,783	11.6
2022	24,451	2,790	11.4

PD : Accident Number & Accident Rate



Note: ₁Number of insured vehicles per year, ₂Number of accidents, ₃Accident rate

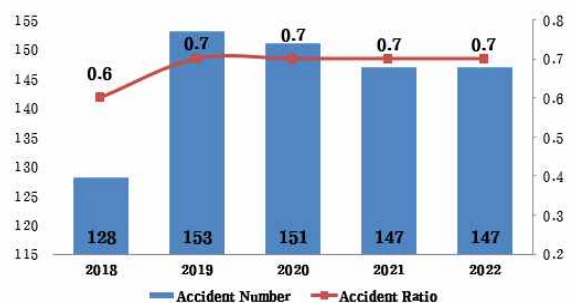
Source: KIDI, Annual Automobile Insurance Statistics

The number of accidents in Expanded Medical Payments (EMP) and the accident rate remained almost the same in 2022.

Expanded Medical Payments Accident Rate

	Vehicle ₁	Case ₂	Rate ₃
			Thousands, %
2018	20,356	128	0.6
2019	20,985	153	0.7
2020	21,469	151	0.7
2021	22,086	147	0.7
2022	22,625	147	0.7

EMP : Accident Number & Accident Rate



Note: ₁Number of insured vehicles per year, ₂Number of accidents, ₃Accident rate

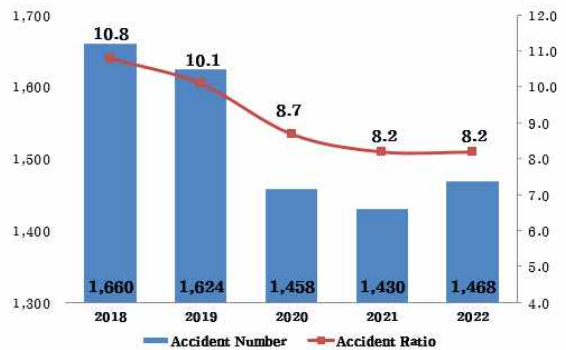
Source: KIDI, Annual Automobile Insurance Statistics

The number of accidents had decreased from 2018 to 2021 but started to increase, recording 1,468 in 2022.

Physical Damage Accident Rate

	Thousands, %		
	Vehicle ₁	Case ₂	Rate ₃
2018	15,319	1,660	10.8
2019	16,088	1,624	10.1
2020	16,699	1,458	8.7
2021	17,394	1,430	8.2
2022	18,002	1,468	8.2

PhD : Accident Number & Accident Rate



Note: ₁Number of insured vehicles per year, ₂Number of accidents, ₃Accident rate

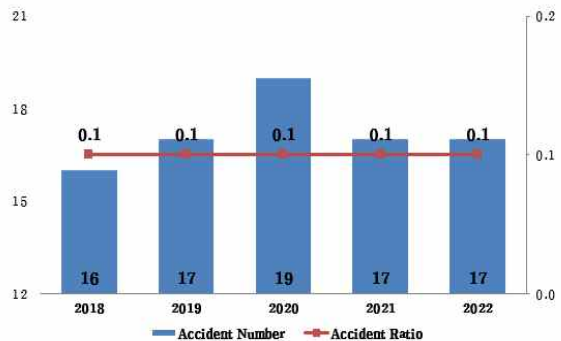
Source: KIDI, Annual Automobile Insurance Statistics

The accident number of uninsured motorists recorded 17 thousand cases in 2022, which had been fluctuating a little for the past several years, whereas the accident rate of uninsured motorists had stayed the same at 0.1 percent for the past five years.

Uninsured Motorist Accident Rate

	Thousands, %		
	Vehicle ₁	Case ₂	Rate ₃
2018	19,357	16	0.1
2019	19,649	17	0.1
2020	19,840	19	0.1
2021	20,294	17	0.1
2022	20,708	17	0.1

UM : Accident Number & Accident Rate



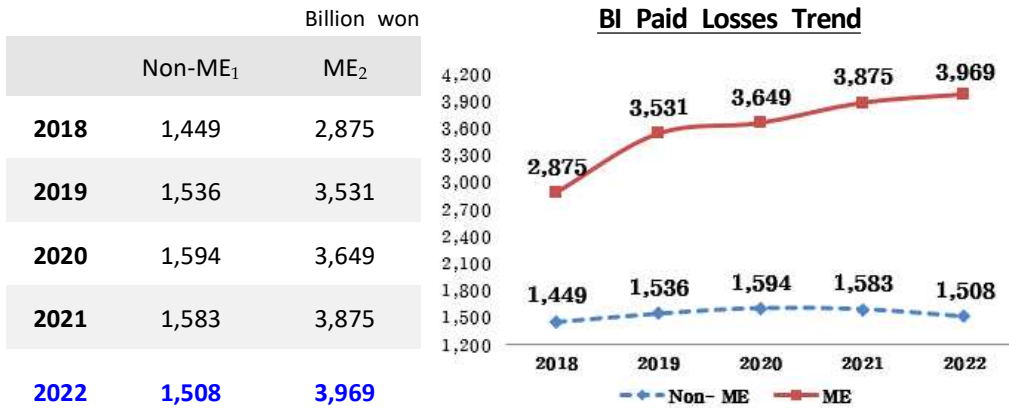
Note: ₁Number of insured vehicles per year, ₂Number of accidents, ₃Accident rate

Source: KIDI, Annual Automobile Insurance Statistics

5. Losses

5-1. Bodily Injury Losses

Medical expenses for bodily injury loss accounted for 72.5 percent of the total paid losses. Meanwhile, non-medical expenses such as Solatium and Lost Earnings accounted for 27.5 percent. Details of the paid losses for death, injury, and disability are as follows.



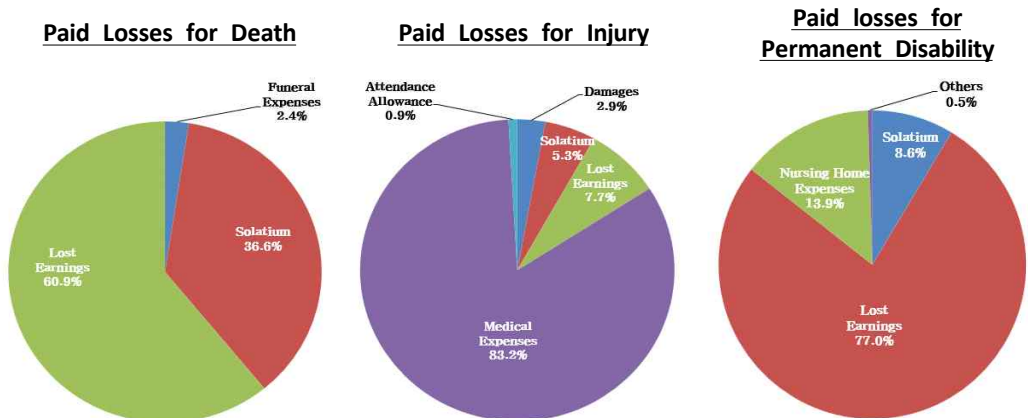
Note: 1. ₁Non-Medical Expenses, ₂Medical Expenses

2. Non-Medical expenses include Solatium, Lost Earnings and etc.

3. Paid Losses are estimated on the base of the payment of closed claims(Accident Year based)

Source: KIDI, Annual Automobile Insurance Statistics

Paid Losses by Type of Payment



Injury in Bodily Injury paid losses accounted for 86.6 percent of the total paid losses, which is a 1.3 percentage points increase compared to the previous year. On the other hand, the share of Death, Permanent Disability, and Others decreased as a result of the increase in the share of Injury.

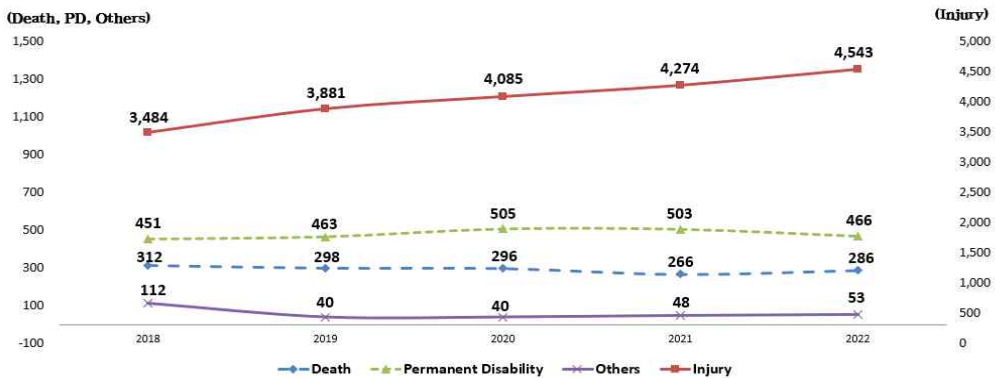
Bodily Injury Paid Losses Trend

Billion won, %

	Death	Share	Injury	Share	Permanent Disability	Share	Others	Share	Total
2018	312	7.2	3,484	79.9	451	10.3	112	2.6	4,359
2019	298	6.4	3,881	82.9	463	9.9	40	0.9	4,682
2020	296	6.0	4,085	82.9	505	10.3	40	0.8	4,926
2021	266	5.3	4,274	85.3	503	10.0	48	1.0	5,009
2022	286	5.7	4,543	90.7	466	9.3	53	1.1	5,243

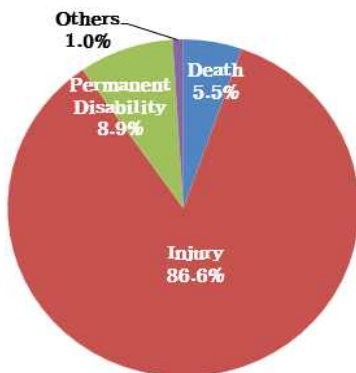
Note: Paid Losses are based on the payment of closed claims

Bodily Injury Paid Losses Trend



Source: KIDI, Annual Automobile Insurance Statistics

Bodily Injury Paid Losses



- The total paid losses of Bodily Injury, Permanent Disability, and Death were 86.6 percent, 8.9 percent, and 5.5 percent respectively in 2022.

5-2. Property Damage Losses

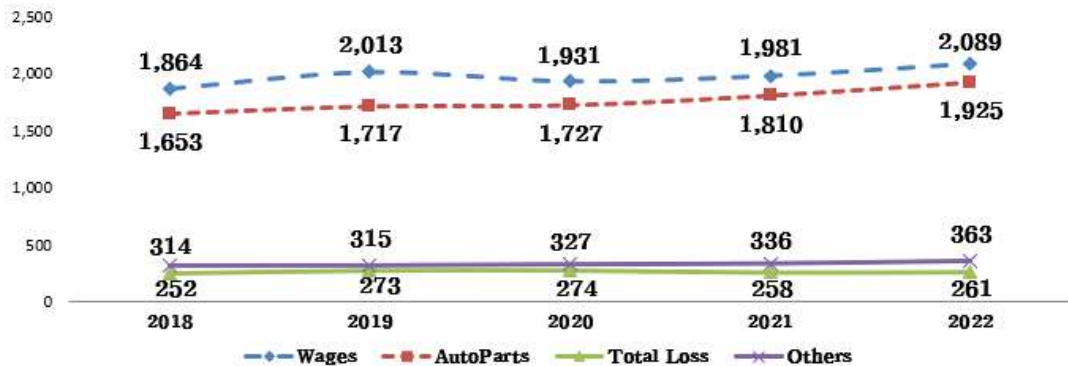
Property damage paid losses in 2022 was 4,638 billion won, an increase of 5.7 percent compared to the previous year. The share of wages was 45.0 percent and the share of auto parts was 41.5 percent of the total losses.

Property Damage Paid Losses Trend

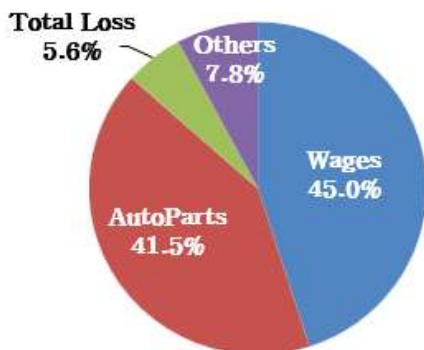
	Billion won, %								
	Wages	Share	Auto Parts	Share	Total Loss	Share	Others	Share	Total
2018	1,864	45.7	1,653	40.5	252	6.2	314	7.7	4,084
2019	2,013	46.6	1,717	39.8	273	6.3	315	7.3	4,316
2020	1,931	45.3	1,727	40.6	274	6.4	327	7.7	4,259
2021	1,981	45.2	1,810	41.3	258	5.9	336	7.7	4,386
2022	2,089	45.0	1,925	41.5	261	5.6	363	7.8	4,638

Note: Paid Losses are based on the payment of closed claims

Source: KIDI, Annual Automobile Insurance Statistics



Property Damage Paid Losses



- Wages (45.0 percent of losses in Property Damage), and auto parts (41.5 percent of losses in Property Damage) accounted for 86.5 percent of the total amount in 2022.

5-3. Physical Damage Losses

Physical Damage Paid Losses amounted to 3,430 billion won in 2022, increased by 9.9 percent compared to the previous year. The share of Total Loss increased in 2022.

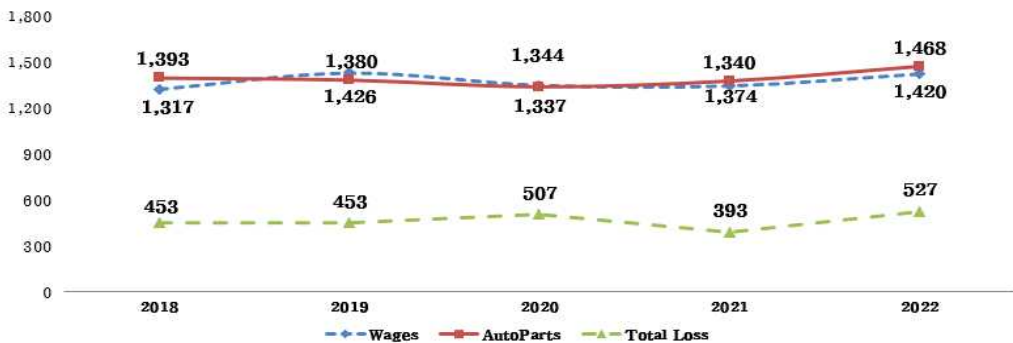
Physical Damage Paid Losses Trend

	Wages	Share	Auto Parts	Share	Total Loss	Share	Others	Share	Total
	Billion won, %								
2018	1,317	41.4	1,393	43.8	453	14.3	15	0.5	3,178
2019	1,426	43.5	1,980	42.1	453	13.8	15	0.5	3,274
2020	1,344	42.0	1,337	41.7	507	15.8	15	0.5	3,203
2021	1,340	42.9	1,374	44.0	393	12.6	14	0.5	3,120
2022	1,420	41.4	1,468	42.8	527	15.4	14	0.4	3,430

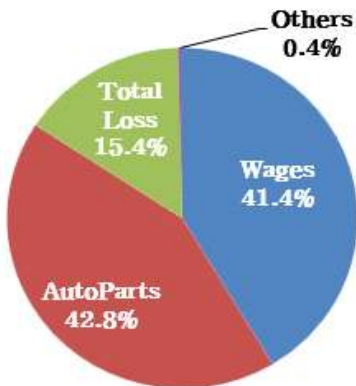
Note: Paid Losses are based on the payment of closed claims

Source: KIDI, Annual Automobile Insurance Statistics

Physical Damage Paid Losses Trend



Physical Damage Paid Losses



- Wages (41.4 percent) and AutoParts (42.8 percent) in Physical Damage accounted for 84.2 percent of the total paid loss amount in 2022.

6. Expenses and Expense Ratio

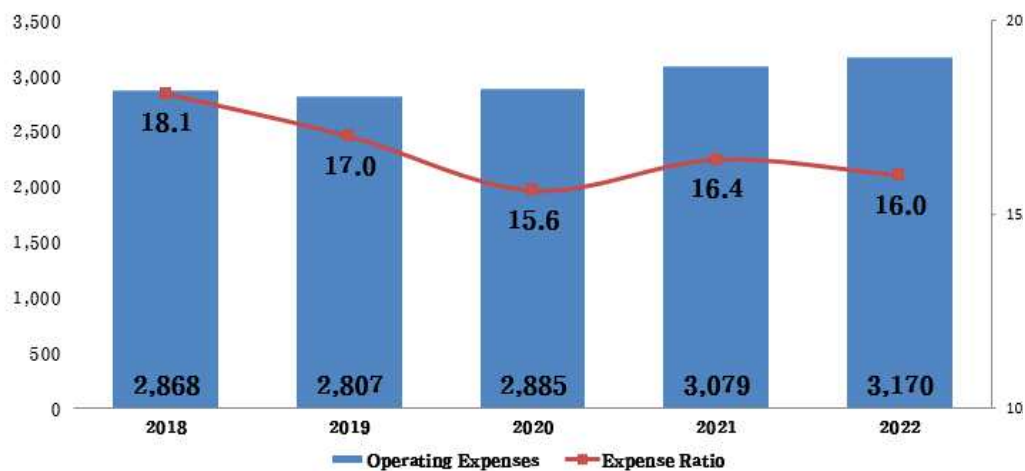
Operating Expenses recorded 3,170 billion won and the expense ratio was 16.0 percent in 2022, which is a 0.4 percentage points decrease compared to the previous year.

Trends in Expenses and Expense Ratio

	2018	2019	2020	2021	2022
					Billion won, %
Operating Expenses	2,868	2,807	2,885	3,079	3,170
Expense Ratio	18.1	17.0	15.6	16.4	16.0

Note: Claim survey fee is excluded from Operating Expenses in accordance with IFRS basis
Source: FSS, Monthly Financial Statistics

Expenses and Expense Ratio in Automobile Insurance



7. Underwriting Results

Underwriting results of automobile insurance were 433 billion won in 2022. It had been in deficit since 2018. The underwriting results came back in 2020 and it recorded 433 billion won in 2022. The difference between the underwriting results in 2021 and those of 2022 was 42 billion won.

Trends in Underwriting Results

	Underwriting Results	Billion won, % Annual % change
2018	-739	-56,434.0
2019	-1,656	-124.1
2020	-385	76.7
2021	391	201.6
2022	433	10.7

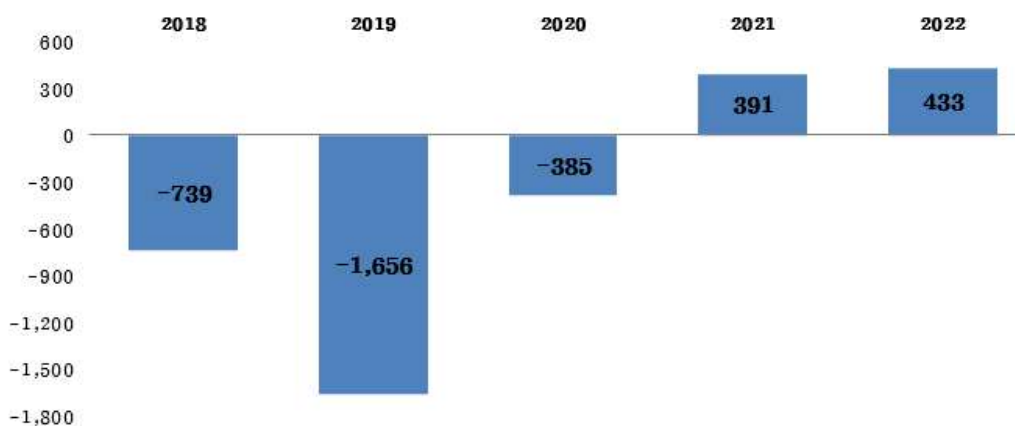
- Underwriting results had usually been in negative figures for many years, and the fluctuations in annual underwriting results have been wide and irregular.

- In 2022, as shown in the left table, the result improved compared to the previous year and recorded 42 billion won.

Note: Annual % change refers to the growth rate compared to the previous year

Source: FSS, Monthly Financial Statistics

Trends in Underwriting Results of Automobile Insurance



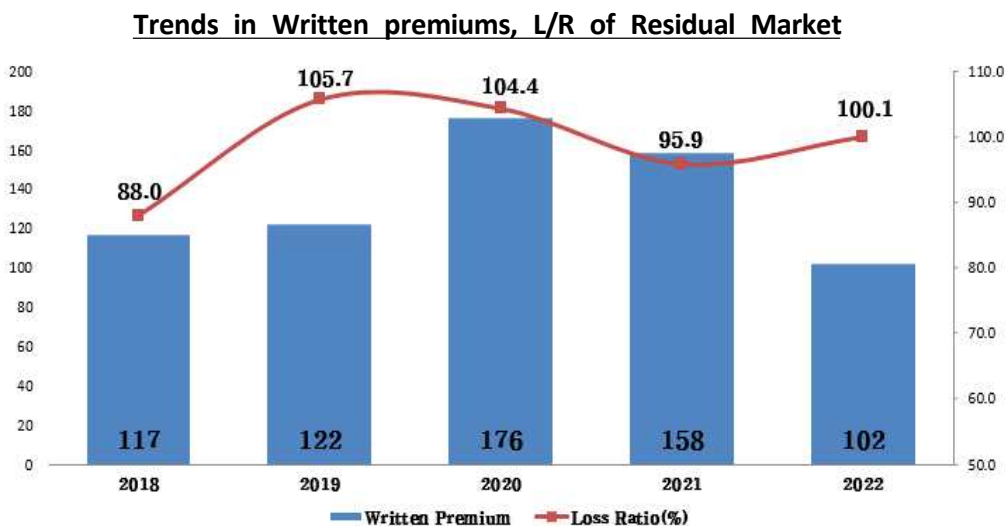
8. Residual Market

The residual market continues to provide coverage for those who cannot purchase insurance in the regular market. Written premiums for the residual market had shrunk until 2018 and started to rise in 2019. However, it started to be shrink again in 2022. Written premium in 2022 was 102 billion won, a decrease of 15 billion won compared to 2018. The loss ratio was 100.1 percent in 2022, which was a 4.2 percentage points increase compared to the previous year.

Residual Market : Written premiums, Earned premiums, Incurred Losses, Loss ratio

	Billion won			
	Written premiums	Earned premiums	Incurred Losses	Loss ratio(%)
2018	117	119	105	88.0
2019	122	117	124	105.7
2020	176	152	159	104.4
2021	158	170	163	95.9
2022	102	130	131	100.1

Source: KIDI, Monthly Automobile Insurance Statistics



9. Acts Related with Automobile Insurance

9-1. Guarantee of Automobile Accident Compensation Act

- o The Guarantee of Automobile Accident Compensation Act was first enacted in April 1963(Act No. 1314) and last amended in December 2016(Act No. 14450) to protect victims of motor vehicle accidents by which compensation for loss resulting from the death or injury of any person and the destruction or damage of any property caused by motor vehicle accidents.
- o The law provides that if any person who operates a motor vehicle for personal use injures or kills another person or damages any property of a third party by such operation, he/she shall be liable to compensate the damages therefrom. To ensure this, the law provides that any motor vehicle owner shall purchase a liability insurance policy that covers an amount that shall be paid to a third party who has died or been injured or whose property is destroyed or damaged due to the operation of the motor vehicle.
- o Business of Guaranteeing Motor Vehicle Accident Compensation allows the Government to conduct investigations ex officio and compensate for damage sustained by the victim to the extent and amount covered by liability insurance if the victim had died or been injured by an accident that the owner of a motor vehicle is unidentified or a person other than a policyholder is liable to compensate for damage except for any accident that occurred during the operation of any motor vehicle in any places other than on a road.
- o On Feb. 22, 2005, Insuring Coverage for Property Damage became compulsory and the liability limit of Bodily Injury was raised.

Bodily Injury Liability Coverage	Death/Permanent Disability (1st Degree)	80 mil. won → 100 mil. won
	Injury(1st Degree)	15 mil. won → 20 mil. won
Property Damage Liability Coverage	Liability for paying an amount up to 10 million won to a third party whose property is destroyed or damaged	

* There are standards for grading Injury and Permanent Disability each. The standards have 14 levels of injury and permanent disability categories for each one.

- o On April 1, 2016, the Limit of liability for Bodily Injury and Minimum liability for Property Damages were raised.

Bodily Injury Liability Coverage	Death/Permanent Disability (1st Degree)	100 mil. won → 150 mil. won
	Injury(1st Degree)	20 mil. won → 30 mil. won
Property Damage Liability Coverage	Minimum Liability	10 mil. won → 20 mil. won

- o On July 28, 2022, exceptions for indemnification were changed in compulsory insurance.

		drug, drunk drivers	unlicensed, hit and run drivers
before 2022.7.28.	Bodily Injury	10 mil. won(per 1 case)	3 mil. won(per 1 case)
	Property Damage	5 mil. won(per 1 case)	1 mil. won(per 1 case)
since 2022.7.28.	Bodily Injury	150 mil. won(per 1 victim)	
	Property Damage	20 mil. won(per 1 case)	

9-2. Act on Special Cases concerning the Settlement of Traffic Accidents

- o Act on Special Cases concerning the Settlement of Traffic Accidents was first enacted in December 1981(Act No. 3490) and last amended in December 2016(Act No. 14277) to facilitate a prompt recovery of damage caused by traffic accidents and to promote convenience of people's everyday life by providing for special cases on criminal punishment of drivers of vehicles involved in traffic accidents caused by occupational or gross negligence.

- o According to the Act, a victim cannot file a lawsuit with the court in accordance with Article 4 of the Act as long as a person has insured oneself for all amounts the victim can fully be compensated. In other words, the person must insure oneself for Bodily Injury Liability Coverage I and Bodily Injury Liability Coverage II which can indemnify the victim for an unlimited amount of liability. The exceptions are as follows: death of the victim, hit-and-run accident, and ten cases of severe violation of traffic law; traffic light violation, crossing the center line, speed limit violation, violation of overtaking prohibition, violation of traveling in intersection, violation of pedestrian protection, unlicensed driving, drinking and driving, encroaching upon the sidewalk, and starting a vehicle with the door open (violation of passenger protection)
- o On December 22, 2009, the Act was amended. There was an addition to exceptions for indemnification; namely, "School Zone Accident". A driver who causes an injury to a child at the zone of Child Protection(School-zone) can not be indemnified for his behavior.
- o On December 3, 2017, the Act was amended. There was an addition to exceptions for indemnification; namely, "Violation of loading freight". A driver who fails to prevent freight from falling off while driving can not be indemnified for his behavior.

9-3. Insurance Business Act

- o The purpose of this Act is to guide and supervise the insurance business, efficiently protect the rights and interests of the policyholder, the insured and other interested persons concerned and thus to contribute to the sound development of the insurance business and the balanced growth of the national economy.
- o Insurance Business Act was enacted and promulgated on Jan. 15, 1962.

- Paid-in capital raised (Life Insurance : 0.2 billion won → 10 billion won, Non-life Insurance : 0.3 billion won → 30 billion won) and Insurance Guarantee Fund established on Dec. 31, 1988
- Qualification of shareholder limited in order to actively cope with the trend in globalization and to strengthen competitiveness in the financial industry, and paid-in capital raised to 30 billion won from 10 billion won on Aug. 28, 1997.
- In the past, the Advisory Organization (KIDI) had calculated premiums by adding expenses on top of pure premiums. After the Act was amended on Feb. 5, 1999, the Advisory Organization (KIDI) provided only pure premiums, and the insurers added their own expenses to pure premiums in order to set their own loadings.
- On Jan. 21, 2000, the Act provided that an insurance company, intending to perform part of the insurance business among the types of insurance business, could select a different paid-in or foundation fund within the limit of not less than 10 billion won.
- On May 29, 2003, the Act provided that paid-in capital of tele-marketing insurance companies was set at two thirds of that of other general insurance companies.
- On Sep 1, 2008, the solicitors were permitted cross-selling of insurance under a new sales scheme. It allowed non-life insurers to sell life insurance products and life insurers to sell property and casualty insurance schemes.

9-4. Automobile Insurance Plan(AIP)

- Comprehensive automobile insurance is voluntary so that the insurers can select whether or not to underwrite a policy based on their underwriting policies and procedures. (Insurance companies normally evade those who have excessively high loss ratios.)

- As a result, automobile insurance companies denied auto insurance coverage to people they consider high-risk drivers. And those with high-risk will eventually increase the total premiums that will divide equally among even the bona-fide third party.
- Accordingly, non-life insurance companies concluded an agreement, 「Agreement of Joint Underwriting」, to provide automobile insurance coverage to those who are unable to obtain coverage in the voluntary market and to protect the victim. This plan became effective on April 24, 1987.
- As the number of people who are unable to obtain coverage in the voluntary market had rapidly increased, the Detailed Operational Directives for the Implementation of Agreement of Joint Underwriting were made on Feb. 10, 1995. Since May 1, 1995, the distribution was automatically conducted by KIDI's computer network.
- In a view of the application of premiums, KIDI has made premiums for the residual market that extra percentage is added compared to other premiums in the voluntary market, considering the risk of accident and the features of joint underwriting.

10. Ratemaking System

10-1. Ratemaking

- o The Applied premium of automobile insurance is calculated by the base premium and various rates that depend on characteristics of the automobile and the insured. Base premium is determined by usage, type of automobile, coverage and the limit of liability for each of the coverage. In addition, there are many kinds of rates considered to calculate the insurance price, merit-demerit rate, insured characteristic rate, rate on particular contract, special rate and etc. The applied premium is calculated as follows.

$$\boxed{\text{Applied premium}} = \boxed{\text{Base premium}} \times \boxed{\text{Insured characteristic rate}} \times \boxed{\text{Merit-Demerit rate}} \times \boxed{\text{Special rate}} \times \boxed{\text{Other rates}}$$

- o Merit-demerit rate is applied to fleet risk and non-fleet risk respectively. This rate is determined by accident records and loss records of the insured. The rate starts from class 11 and ranges from class 1 (surcharge) to class 29 (discount).
- o Insured characteristic rates reflect previous auto insurance records and traffic violation records. Rate for previous auto insurance experience is the highest for a beginner. Rate for traffic violation is determined by traffic violation records of the insured during the valuation period. Surcharge rates applied to each traffic violation type is as follows.

Group	Traffic Violation Type	Rate	
Surcharge Group	1	1. Unlicensed Driving	20%
		2. Leaving the Scene of Accident	20%
	2	3-1. Driving under the influence (1 times)	10%
		3-2. Driving under the influence (more than 2 times)	20%
		4-1. Traffic light violation, Failing to Yield Right of Way, Speeding over posted limit, Violation of the duty to comply with pedestrian protection (2 ~ 3 times)	5%
		4-2. Traffic light violation, Failing to Yield Right of Way, Speeding over posted limit, Violation of the duty to comply with pedestrian protection (more than 4 times)	10%

- Rate on a particular contract reflects coverage characteristics such as who is qualified to drive or who will drive. When the policy excludes drivers under the age of twenty-one or twenty-six, lower premium will be applied. Furthermore, when drivers are limited to named insured and relatives, the premium will be discounted. Especially, special clauses for a family or a married couple are usually selected.
- Special rate applies to the special risk which has different automobile safety devices or different characteristics based on use or type of car. For example, there are rate for cars equipped with ABS, sports and sports-type cars and so on.

10-2. Improvement in Ratemaking System

- The improved Bonus-malus system has been applied since January 2007. The period that merit-demerit rate reaches the highest (200%), and the lowest (40%) is liberalized to each company according to the risk of the insured. And safeguards like ‘Guard grade system on long non-accident’ are established to prevent policyholders’ confusion. It is expected to enhance the degree of equity among insureds and solve the problem of non-acceptance of high discounted group.
 - * In 2011, classes of Bonus-malus system were subdivided into 23 classes and the number of classes will grow to 29 from 2012 to 2017. The rate for the 29th class will be 30%. In case the policyholder makes an insurance contract in condition of the 23rd class in 2011, the person is subject to 38%, and the policyholder in condition of the 24th class in 2012 is subject to 36%.
- Classification based on a model of car was adopted for physical damage of private automobile in April 2007. Private automobiles were sorted to 262 models and grouped into 21 levels on the basis of relative loss ratios. Each company can freely determine one's rate. But size of the entire written premiums must be kept unchanged. This will improve the degree of equity and make manufacturers to reduce the prices of auto parts.

- The policyholder can purchase the mileage rider charging insurance fees according to mileage from December 2011. The policyholder can get a maximum discount rate of 13 percent.
- There is no classification based on territorial area. But there have been significant differences in loss ratios by territorial area, and KIDI collected many data to apply them in premium rating.

10-3. Deregulation on Insurance Rate Approval System

- Before April 1st 2000
 - Prior approval system
 - Insurance companies can use the rates provided by KIDI
- Since April 1st 2000
 - File & use system
 - Insurance companies can calculate additional premiums determined according to their own business results. But they shall use the pure premiums provided by KIDI
- Since August 1st 2001
 - File & use system
 - Every insurer can make their own premiums. The pure premiums provided by KIDI is only reference rate for insurance companies.
- Since September 2003
 - Use & report system
 - Insurance companies can use the changed rates freely. After using the rates, they must report the information concerning rate revision to the authorities on a quarterly basis. But in some limited cases, such as a highly fluctuated rate change or newly introduced rating factor, should have the file & use system for the new rates.

< The Annual Plan of Insurance Rate Liberalization >

(Unit : %)

Year	Bonus-Malus Rate				Driving Experience Rate		Base Premium		
	Non-Fleet		Fleet		Liability	Comprehensive	Liability	Comprehensive	
	Liability	Comprehensive	Liability	Comprehensive					
'94.4		10		20					Flex Rate (±1%)
'96.8		Abolished		20		10	3~10		
'97.8				20		10	3~10	3~10	
'98.8				20		Abolished	6~20	6~20	
'00.4				Abolished			Abolishing Flex Rate	Abolishing Flex Rate	Liberal Rate
							Liberalization of Loading Charge	Liberalization of Loading Charge	
'01.1							Liberalization of Pure Premium of Multi-personnel Vehicle		Liberal Rate
'01.4							Commercial Auto Policy		
							Liberalization of Pure premium	Liberalization of Pure premium	
'01.8							Personal & Business Auto policy		Liberal Rate
							Liberalization of Pure premium	Liberalization of Pure premium	

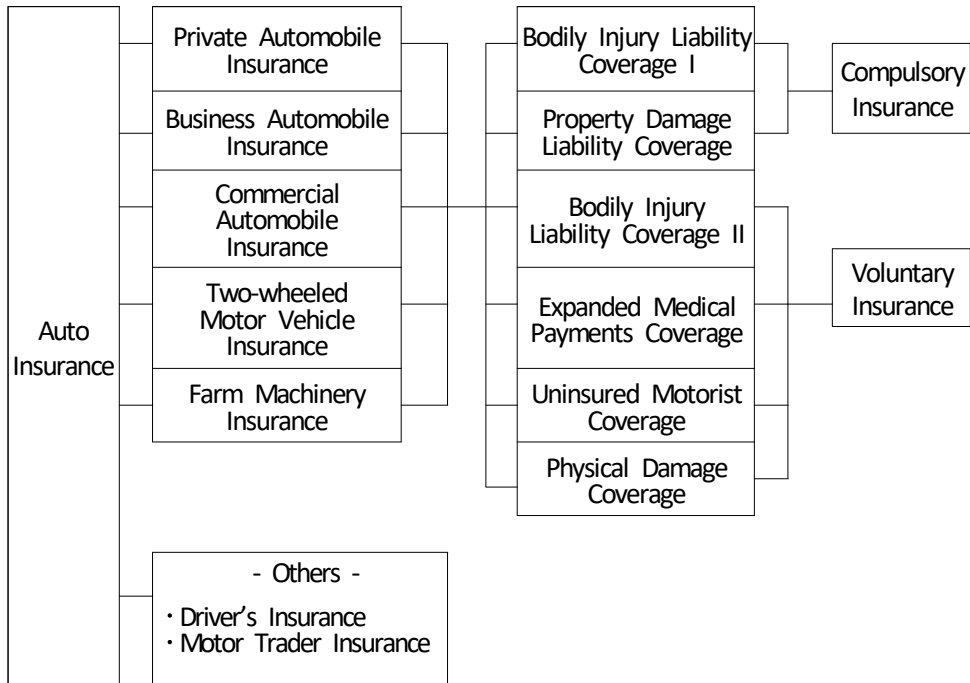
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- **Appendix I. Korea's Automobile Insurance**
- **Appendix II. Glossaries**
- **Appendix III. Special Clauses**
- **Appendix IV. KIDI's Brief History**
- **Appendix V. KIDI Organizational Chart**

APPENDICES

Appendix I. Korea's Automobile Insurance

Automobile Insurance Products



Motor Vehicle to be Insured by Insurance Product

o Private Automobile Insurance	All private passenger vehicles owned by an individual or a self-employed person
o Business Automobile Insurance	All passenger vehicles, official vehicles, and construction machinery except for private automobiles
o Commercial Automobile Insurance	All commercial vehicles, construction machines, and rental vehicles
o Two-wheeled Motor Vehicle Insurance	All two-wheeled motor vehicles and motorbikes
o Farm Machinery Insurance	Cultivators, farm tractors, and combines

Appendix II. Glossaries

Private Automobile Insurance

Privately-owned motor vehicles with a seating capacity of ten or less persons can be insured. A policyholder can select one or more of six types of coverage (Bodily Injury Liability Coverage I, Bodily Injury Liability Coverage II, Property Damage Liability Coverage, Expanded Medical Payments Coverage, Uninsured Motorist Coverage, and Physical Damage Coverage) and insure oneself or the person's property. Bodily Injury Liability Coverage I and Property Damage Liability Coverage are compulsory to all automobiles.

Private Automobile Insurance Plus

Private Automobile Insurance Plus is a high quality product that expands the scope of indemnification for bodily injury of the insured and damage of the insured vehicle.

Business Automobile Insurance

All non-commercial motor vehicles except for privately-owned motor vehicle with a seating capacity of ten or less persons can be insured. A policyholder can select one or more of six types of coverage (Bodily Injury Liability Coverage I, Bodily Injury Liability Coverage II, Property Damage Liability Coverage, Expanded Medical Payments Coverage, Uninsured Motorist Coverage, and Physical Damage Coverage) and insure oneself or the person's property. Bodily Injury Liability Coverage I and Property Damage Liability Coverage are compulsory to all automobiles.

Business Automobile Insurance Plus

There are four types of motor vehicles that can be insured; privately-owned motor vehicle of the third class van, light-weight van, privately-owned motor vehicle of the fourth class truck, and light-weight truck. This is a high quality product that expands the scope of indemnification for bodily injury of the insured and damage of the insured vehicle.

Commercial Automobile Insurance

All commercial vehicles can be insured. A policyholder can select one or

more of five types of coverage(Bodily Injury Liability Coverage I, Bodily Injury Liability Coverage II, Property Damage Liability Coverage, Expanded Medical Payments, and Physical Damage Coverage). Bodily Injury Liability Coverage I, Bodily Injury Liability Coverage II and Property Damage Liability Coverage are compulsory.

Two-wheeled Motor Vehicle Insurance

Two-wheeled motor vehicle and motor bike can be insured. A policyholder can select one or more of six types of coverage(Bodily Injury Liability Coverage I, Bodily Injury Liability Coverage II, Property Damage Liability Coverage, Expanded Medical Payments Coverage, Uninsured Motorist Coverage, and Physical Damage Coverage) and insure oneself or the person's property. Bodily Injury Liability Coverage I and Property Damage Liability Coverage are compulsory.

Farm Machinery Insurance

Farm machinery such as cultivator, farm tractor, and combine can be insured. A policyholder can select one or more of four types of coverage(Bodily Injury Liability Coverage, Property Damage Liability Coverage, Expanded Medical Payments Coverage, and Farm Machinery Damage Coverage) and insure oneself or the person's property.

Driver`s Insurance

A person who drives a vehicle irrespective of owning a vehicle can be insured. The insured receives indemnification for damage caused by a car accident.

Motor Trader Insurance

A motor trader, who is a person or persons actively operating a formal business on a full or part-time basis for profit, either selling (used) vehicles or providing a service relating to repair or maintenance of motor vehicle, can insure the person's property. This insurance compensates for damage caused by the motor trader during the use or management of vehicle.

Bodily Injury Liability Coverage I

This coverage insures the insured for all amounts which the insured may

have to pay as a result of the person being legally liable for an individual's death or injury, or damage to an individual's property resulting from a car accident. This coverage is compulsory to those who want to insure oneself.

Bodily Injury Liability Coverage II

The coverage insures the insured for all amounts exceeding the limit of liability of the compulsory automobile liability insurance.

Property Damage Liability Coverage

The coverage indemnifies the insured against property damage of the third party resulted from a car accident.

Expanded Medical Payments Coverage

The coverage insures the insured or the person's family member(s) for the insured's or the person's family member's death or bodily injury.

Physical Damage Coverage

The coverage insures the insured vehicle for all damages resulted from physical damage, car theft, fire, or flood.

Uninsured Motorist Coverage

The coverage can be insured as long as the insured already has Bodily Injury I, Bodily Injury II, Property Damage, and Personal Accident Coverage. The coverage insure the insured for one's death or bodily injury caused by an uninsured vehicle.

FY (Fiscal Year)

The fiscal year for the Korean insurance industry begins on January 1 and ends on December 31.

Appendix III. Special Clauses

Special Clauses for Family Driving only

An insurer shall indemnify if the insured limited the drivers of the automobile specified in the policy to the insured and one's family members only. However, this will not apply to the Bodily Injury Liability I Coverage.

The term 「family members」 refers to ① parents or foster parents, ② parents or foster parents of the spouse of the named insured, living together, ③ legal spouse or spouse in a real marital relationship, ④ child born in a legal or real marital relationship, foster child, or ⑤ daughter-in-law.

Special Clauses for Married-couple Driving only

An insurer shall indemnify if the insured limited the drivers of the automobile specified in the policy to the insured and one's spouse only. However, this will not apply to the Bodily Injury Liability I Coverage.

The 「term spouse」 refers to legal spouse, or spouse in a real marital relationship.

Special Clauses for Driving by age of drivers

For example, in case that the insured limits the drivers of the automobile specified in the policy to those of age 21 or older only, the insurer shall indemnify as prescribed in the clauses. However, this will not apply to the Bodily Injury Liability I Coverage.

Special Clauses for Driving Other Automobile

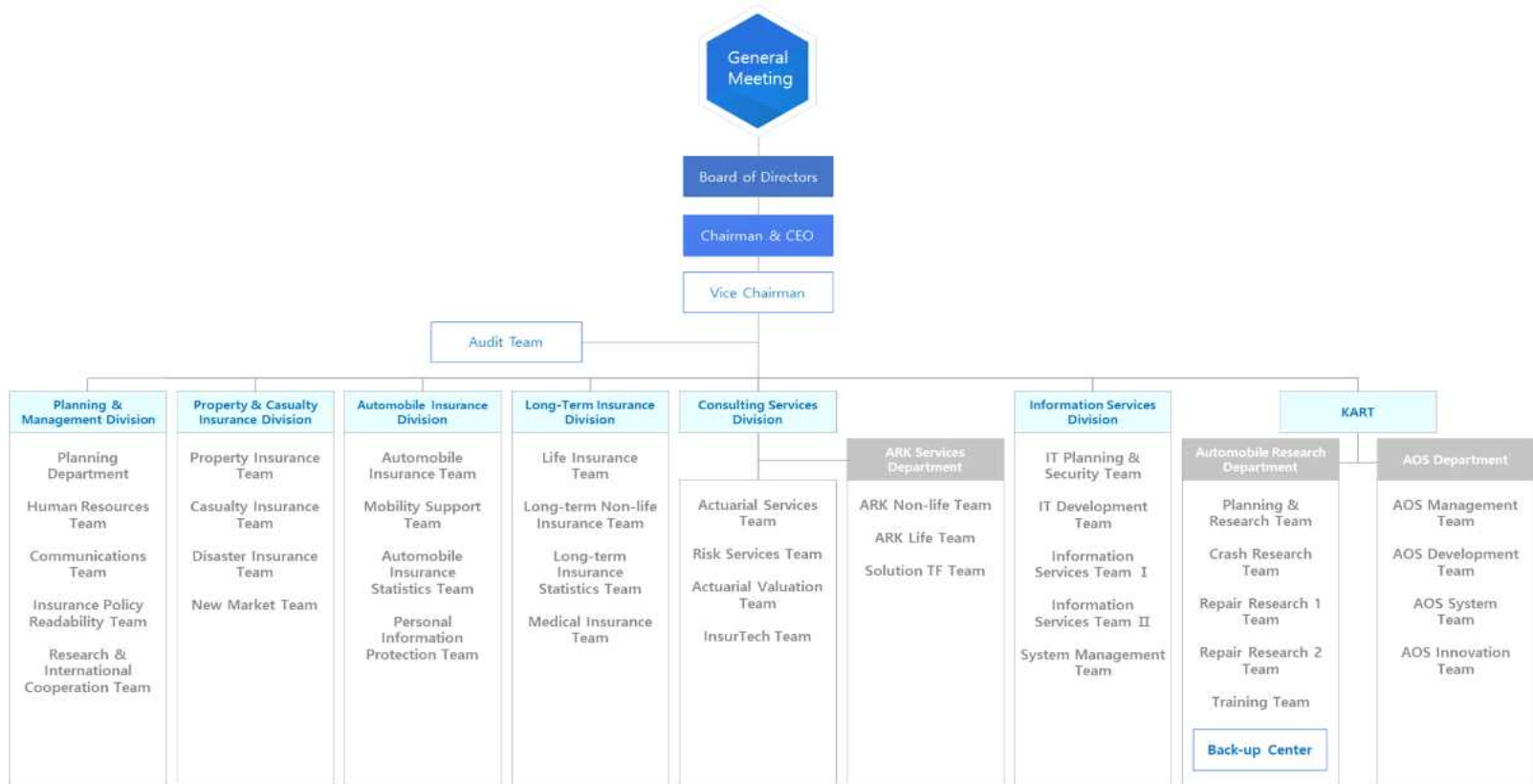
In case that the insured suffers a loss incurred by the legal liability against another party arising out of the bodily injury accident or property damage accident occurred, or that the insured suffered bodily injury while the insured was driving another automobile (except for the accident occurred while parking or stopping the automobile), the insured shall consider the other automobile driven by the insured as the insured automobile covered by Bodily Injury Liability II Coverage, Property Damage Liability Coverage or Expanded Medical Payment Coverage of General Clauses, and indemnify as prescribed in the clauses.

Appendix IV. KIDI's Brief History

1983. 12. 16. Established Korea Non-life Insurance Rating Association
1988. 12. 31. Insurance Business Law amended to include a provision regarding the legal background for the establishment of an insurance rate-making organization
1989. 11. 18. Officially authorized to establish Korea Insurance Development Institute (KIDI)
1989. 11. 27. Established Korea Insurance Development Institute (Korea Non-life Insurance Rating Association dissolved)
1992. 03. 11. Established Korea Automobile Insurance Repair Research & Training Center as a subsidiary of Korea Insurance Development Institute
1992. 05. 06. Designated a business partner responsible for managing Insurance Information Network
1995. 09. 01. Insurance Research Center established
1999. 10. 03. Held jointly EEAC (East Asia Actuarial Committee)
2000. 02. 01. Opened KIDI Digital Management System
2000. 03. 10. Designated as an organization to provide the insurance statistics (published Annual Insurance Statistics, Insurance Statistics Yearbook)
2000. 05. Designated 「Insurance Development Research」 as an academic journal
2000. 06. Designated as the organization operating insurance examinations for actuary and claim adjuster
2000. 08. 01. Opened KIDIPOOL (Knowledge Management System)
2003. 12. 01. 20th Anniversary of Korea Insurance Development Institute
2005. 10. 04. Opened KIDI Consortium Retirement Payment System (DB type)
2005. 12. 01. Opened KIDI Consortium Retirement Payment System (DC & IRA type)

2007. 12. 07. Korea Insurance Research Institute (KIRI) established (Insurance Research Center is developed and specialized)
2010. 11. 25. Korea Insurance Research Institute (KIRI) was founded as a new corporation
2011. 04. Established ICPS (Insurance Claims Pooling System) Claims Map system
2012. 02. Opened AIPIS (Auto Insurance Premium Integrated check System)
2013. 09. Opened Dormant Insurance Claims Inquiry System
2014. 02. 27. MOU with CAPA (Certified Automotive Parts Association)
2015. 03. 24. Opened Automobile Accident Investigation System
2017. 04. 06. Opened INCOS (INSurance statistics CONsumer Service)
2018. 05. 10. Opened MY CAR(<https://mycar.kidi.or.kr>)
2018. 08. Established KIDI-ESG (Economic Scenario Generator) Pro Solution
2019. 06. Established Korean Catastrophe Model
2019. 10. Established IFRS17 Settlement System ARK (Agile, Reliable, Keen)
2020. 05. Opened AOS^α (Automobile repair cost On-line Service)
2020. 07. Expanded the scope of MY CAR(<https://mycar.kidi.or.kr>)
2021. 01. Opened Auto Insurance Premium Inquiry System for customers

Appendix V. KIDI Organizational Chart



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