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Analysis and Forecasting of Sales Volumes of the Regional Insurance Company: The Russian Experience

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Abstract

The article describes the main types of insurance services provided by one of the largest insurance companies of Primorsky Krai in the border areas, determines the methods of analysis of insurance activity and analyzes the size of insurance premiums received during the period of 2012-2014 in order to develop forecasting and risk minimization models. The main value of the study lies with using a well-known methodology in the activities of the regional insurance organization in order to increase

its effectiveness (adapting existing methods of forecasting time series with respect to forecasting sales volumes of the insurance company). Forecasting sales volumes using a Holt-Winters multiplicative model of exponential smoothing gives good results and a certain idea about the events of the future. The models obtained in the course of the study and data calculated on them can be used in the future to generate control and management of sales volumes in the regional insurance company, as well as to calculate the coefficients of the financial condition of the company, which will allow to track the decline in yield. Thus, the proposed algorithm for the analysis of sales volumes based on the methods of comparison, selection of "bottlenecks", method of dynamic range and economic analysis allows to control the dynamics of sales and the development of measures that ensure its successful growth, which has practical relevance to the insurance company of any scale.

Keywords: Insurance Operations; Sales Volume; Holt-Winter Multiplicative Model; Equipment Forecasting

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INTRODUCTION

In the modern conditions of formation of market relations in Russia, the area of insurance is going through a significant transformation of both the internal structure of the content of insurance services and external compliance with the criteria of the market (i.e., a closer binding of the insurance level to the life cycle of the market and its entities). In this connection, the scope of insurance constantly depends on a number of criteria that characterizes the level of development of society's needs and is forced to adapt to the peculiarities of the Russian enterprises and the economic specifics of individual regions. Since the country is geographically represented by several models of insurance depending on the location of the region (its political and economic proximity), level of institutional development, consumer preferences and strategic planning of the region, it is necessary to analyze existing approaches to insurance and highlight features that characterize the Russian specifics.

In this regard, there is a need to develop a methodology (or adaptation of existing methods to the specifics of the insurance companies in the regional markets) that allows actors of the insurance market to effectively plan their activities on the proposal of a package of insurance services (planning sales volumes of insurance services) for the projected performance of the region in general and peculiarities of the development of market entities in particular.

Scientists from different countries study the issues of the economic essence of insurance and the process of arranging the activities of insurance companies in specific markets, as the mechanism of adaptation of classical methods of insurance (public, private) to the peculiarities of the individual countries and regions is highly relevant [1-14].

On the other hand, the issues of social protection and security of citizens who have lost their ability to work due to accidents or adverse events are quite important [15]. The level of support for citizens, techniques and methods of insurance offered by insurance companies determine the level of development of these economic and social relations in a particular society, the development potential of the country. As a result, the experience of developed countries shows the relevance between the level of economic development and the quality of insurance services offered [16-20]. In this respect, an example of the insurance models used in countries where the market is at an early stage of its development from the point of view of world experience of market relations is very interesting [21-26].

An important applied moment for the formation of the program of development of the insurance company in the regional market is the development of the model of forecasting its activities based on the analysis of sales volumes and the factors that influence the receipt of insurance premiums. In view of the existing models [27-31], the study proposes a method that allows to accurately analyze the market's perception of the goods, the reaction to the measures of promotion and protection of the competitive positions.

METHODOLOGY OF THE STUDY

Main trends in the Development of the Regional Insurance Company

The main objective of the regional insurance company is protection of property interests of individuals and legal entities of the Russian Federation, subjects of the Russian Federation and municipal entities upon the occurrence of insured events. The object of research is the largest national insurance company, which experience in different regions of the country has a practical significance for smaller insurance agencies. The company was found 90 years ago.

The insurance company has branches in almost all regions of the country. A regional insurance company was established in February 1992 in Primorsky Krai. The development of the Russian insurance market is largely determined by the activities of this insurance company.

The group of the insurance company includes about 3,000 agencies and insurance departments, as well as 400 centers of settlement of losses; the total number of employees is up to 100,000 people, including more than 65,000 agents; the main types of insurance services are presented in Table 1 [32].

Table 1: Main types of insurance provided by the regional insurance company of Primorsky Krai.

Insurance					
Type	Sector	Form	Objective, purpose	Conditions	Analysis of sales over the period of 2012-2014*
Third party only insurance (TPOI)	Insurance of liability	Compulsory insurance of civil liability of vehicle owners	Protects the interests of car drivers in the event of damage to life, health or property of other persons, and the rights and interests of victims. A victim found not guilty of the accident receives TPOI payments	TPOI contract insures property interests not only of the car owner, but also those of any driver of the vehicle specified by the insurer in the TPOI policy at its conclusion or during the term of the TPOI contract	Dynamics of sales volume from 2012 to 2014 has been uneven; the growth in Q2 of 2012 and Q2 of 2013 was replaced by decline in subsequent quarters of the relevant years. In 2014, there was a significant quarterly growth, and in the Q4 the sales were 50.5% higher than in the Q1 of that year
FCI (Fully Comprehensive Insurance)	Insurance of liability	Voluntary insurance of the vehicle	Voluntary insurance, provides for payments to the car owner in case of stealing, theft or damage to the vehicle	Contract term is from 6 to 12 months. The exception is FCI conditions for vehicles purchased on credit: in such cases, the insurance contract term is one month longer than the loan agreement	2012 and 2013 are characterized by the following trend: growth in sales volume from Q2 to Q4, sharp decline in Q1 of next year. In 2014, a sharp growth in sales volume is replaced with a sharp decline in the next quarter

Apartment insurance	Insurance of property	Property insurance of apartments, finishing (repair) of the apartments, equipment, furniture, appliances and other household goods	Usually insured against the event of destruction or damage as a result of natural disasters, as well as fire, explosion, collision of vehicles, falling trees and flying objects,	Contract term is 1 year	In 2012, sales volume from Q1 to Q2 increased by 30%, sales volumes in Q3 and Q4 are approximately equal. In 2013, there is a growth of 80% from Q1 to Q3, sales volume in Q4 falls by 4%. In 2014, sales volume increases evenly from Q1 to Q4 by 45%.
Insurance of constructions	Insurance of property	Property insurance of buildings (country estate, villas, cottages, garages, finishing (repair) of the houses, equipment and landscape design	sudden destruction of the basic structures of buildings in which the property is located, breakage of heating, water and sanitation systems, deliberate unlawful acts of third persons, as well as theft of property and its destruction (damage) related to the theft or attempted theft		Increase in sales volume from Q2 to Q4, sharp decline in Q1 of next year. In 2014, sales volume in Q1 sharply fell by 49% compared to the preceding Q4 of 2013
*Carried out by the authors					

Figure 1 shows the dynamics of sales volume of basic services provided by the regional insurance company from 2012 to 2014 by quarters.

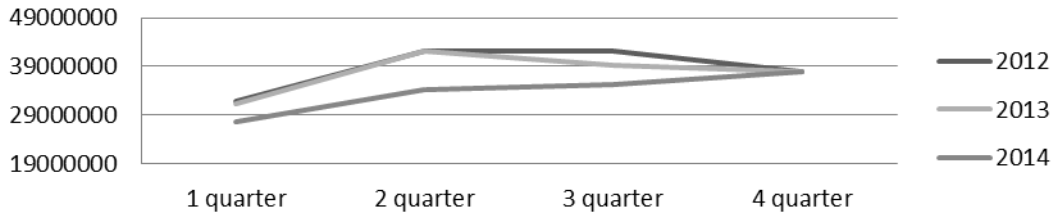


Figure 1: Dynamics of sales volume of the regional insurance company from 2012 to 2014 by quarters, rub.

Based on the data in Figure 1, it can be seen that the low sales volume is observed in Q1 of each year, so it can be assumed that the sales volume depends on seasonality, because more public holidays fall for Q1, then approximately equal sales volumes can be noted after the growth.

Key performance indicators of the dynamics of sales volume by major types of insurance of the company are presented in Table 2.

Table 2: Absolute and relative indicators of the dynamics of sales volume of major types of insurance of the regional insurance company for the period of 2012-2014 (quarterly), rub.

Year	Quarter	TPOI		FCI		IC «Construction»		IC «Apartment»	
		Absolute change compared with the previous quarter	Growth rate (in %) compared with the previous quarter	Absolute change compared with the previous quarter.	Growth rate (in %) compared with the previous quarter	Absolute change compared with the previous quarter	Growth rate (in %) compared with the previous quarter	Absolute change compared with the previous quarter	Growth rate (in %) compared with the previous quarter
2012	I								
	II	8799766	0.31	1154088	0.36	56587	0.19	212698	0.30
	III	-2183782	-0.06	613833	0.14	100454	0.28	275942	0.30
	IV	-4816613	-0.14	1086068	0.22	303775	0.66	434	0.0003
2013	I	-231449	-0.08	3474220	-0.57	508161	-0.66	494407	-0.41

		4							
	II	862592 9	0.31	1711401	0.66	139374	0.54	403260	0.58
	III	- 429679 9	-0.12	1074359	0.25	162166	0.41	164843	0.15
	IV	- 209673 8	-0.06	518412	0.097	276780	0.49	-62664	-0.05
2014	I	- 781229 7.1	-0.26	- 1695081	-0.29	- 410038. 5	-0.49	- 366951. 6	-0.30
	II	553179 8.5	0.25	1059439 .3	0.25	- 50038.5	-0.11	128687. 53	0.15
	III	186931 3.3	0.07	895608. 87	-0.17	14006.9 8	-0.037	122894. 63	0.13
	IV	376659 4.8	0.13	- 1726070 .8	-0.40	252329. 97	0.70	130878. 52	0.12

A trend of uneven distribution of sales volumes of major types of insurance of the regional insurance company for the period under review can be seen in the presented Table 2.

The main reasons for analyzing and forecasting sales volume of major types of insurance of the regional insurance company from 2012 to 2014 are such factors as:

- Need to maintain its market position in the face of strong competition;
- Lack of response to the decline in prices of competing companies;
- Desire to win greater market share, i.e., to take a dominant position;
- Insufficient demand for goods (services) produced or sold.

Method of Analysis of Sales Volumes of the Insurance Company

The tasks of financial analysis of insurance operations include the assessment of their impact on formation of the financial result of the insurer's activities. Insurance operations in general can be regarded as the conclusion of insurance contracts and making insurance payments on them, which is the main source of income of the insurer. Let's analyze the change in the sales volume using the method of allocation of "bottlenecks" and economic analysis. The concept of "bottlenecks" is common in the financial analysis. "Bottlenecks" in company operations should be identified for further resolution of these problems. In this article this concept is used in calculating the performance of the insurance company.

On the basis of sales volume of major types of insurance provided by the insurance company under review, the study has built a chart to highlight the "bottleneck" among the analyzed types of insurance (Figure 2).

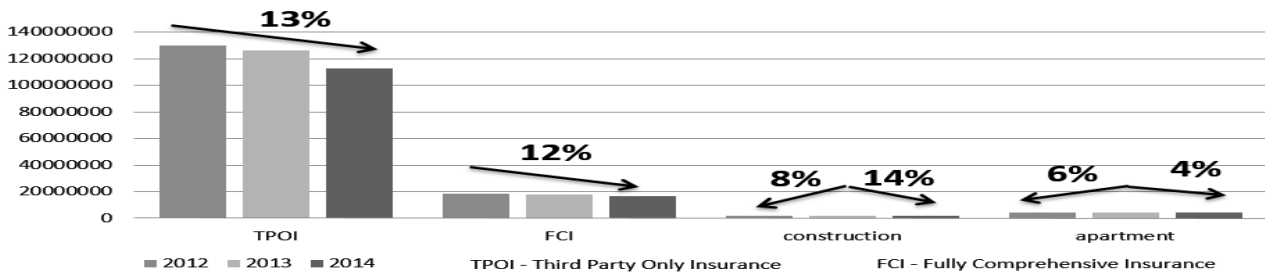


Figure 2: Sales volume of major types of insurance of the regional insurance company for the period of 2012-2014, rub.

This Figure 2 shows that the "bottleneck" among the types of insurance is the "building" type (property insurance), as it sees the largest decline in sales (by 14%).

Average dynamics of major types of insurance of the regional insurance company for the period of 2012-2014 by quarters are shown in Table 3.

Table 3: Average dynamics of major types of insurance of the regional insurance company for the period of 2012-2014 by quarters.

Indicators	TPOI	FCI	IC «Construction»	IC «Apartment»
Average absolute increase, rub.	507267.85	-57338.042	30922.099	51561.508
Average growth coefficient	0.988275762	0.945484056	1.060847928	1.032186863
Average growth rate	98.82757622	94.54840556	106.0847928	103.2186863
Average increase rate	1.172423778	5.451594438	-6.084792822	3.218686283

During the study period, according to Table 3 (quarters from 2012 to 2014), sales volume of such type of insurance as TPOI has increased by 507,267.85 rub., while by FCI it has decreased by 57,338.042 rub.; quarterly sales volume of such type of insurance as TPOI has increased 0.99 times, while that of FCI has increased 0.95 times; in average, the quarterly sales of such type of insurance as TPOI were 98.83% to the level of the previous year, those for FCI were 94.55%.

The effectiveness of the improvement of the activity of the insurance company could be substantially improved if it is based on an economic analysis of statistical data of major types of insurance. From the point of view of theory and practice, there are economic indicators of insurance activity. Analysis of insurance transactions is carried out on the

basis of many of these indicators, which characterize only the insurance activities (Table 4) [33].

Table 4: Group of insurance indicators characterizing the activities of insurance companies.

Group of indicators	Economic substance	Indicators in the group	Designation, calculation formula	Estimated value of the indicator		
				2012	2012	2012
Absolute	have monetary or physical value and are included in accounting or statistical reporting	1. total number of insured objects or concluded agreements	N	56473	53831	46317
		2. number of damaged objects	n_w	321	398	540
		3. insured coverage of all insured objects	S, thous.rub.	8670600	8398067	7504333
		4. amount of insurance premium received	V, thous.rub.	130 059	125971	112565
		5. amount of insurance compensations	W, thous.rub.	61107	62091	87491
		6. absolute amount of income of the insurance organization (difference between the amount of premium and compensations)	$\Delta A = V - W$, thous.rub.	68952	63880	25074
Average	reflect the basic processes in insurance	1. Average insurance coverage of insured objects $\bar{S} = \frac{S}{N}$, thous.rub.	$\bar{S} = 153.53$	$\bar{S} = 156.01$	$\bar{S} = 162.02$	$\bar{S} = 162,02$

		2. Average value of insurance compensation	$\bar{w} = \frac{W}{n_w}$, thous. rub.	$\bar{W} = 190.4$	$\bar{W} = 156.01$	$\bar{W} = 162.02$	$\bar{W} = 162,02$	
		3. Average size of the insurance premium	$\bar{v} = \frac{V}{N}$, thous.rub.	$\bar{V} = 2.30$	$\bar{V} = 2.34$	$\bar{V} = 2.43$	$\bar{V} = 2,43$	
Relative	ratio of some absolute values to others in the form of percentage or coefficients	1. Frequency of insurance claims	reflects the degree (percentage) of probability of an insured event	$d_c = \frac{n_w}{N} * 100$	$d_c = 0,57$	$d_c = 0,73$	$d_c = 1,16$	
		Consequently, there are 0.57; 0.73 and 1 insurance claims per 100 insured objects respectively						
		2. Coefficient of insurance compensation payments	reflects the value of the insurance compensation per 1 rub. of received insurance premium	$K_{comp} = \frac{W}{V}$	$K_{comp} = 0.47$	$K_{comp} = 0.49$	$K_{comp} = 0.78$	
Consequently, 0.47, 0.49 and 0.78 kopecks of insurance compensation fall per 1 rub. of the received insurance premiums. The lower the compensation coefficient, the more profitable the insurance company; in this case, the profit is average								
		3. Loss ratio of insurance coverage q	ratio of the amount of insurance compensation payments to the insurance coverage of the insured	$q = \frac{W}{S}$	$q=0,007$	$q=0,007$	$q=001$	
Loss ratio is quite low								

		object								
	4. Financial stability ratio	characterizes the financial stability of the insurance company	$K_f = t * \sqrt{\frac{1-q}{N*q}}$	<table border="1"> <tr> <td>K_f=0.31</td> <td>K_f=0.31</td> <td>K_f=0.27</td> </tr> <tr> <td colspan="3">financial position of the insurance company is sustainable because financial stability ratio is low; the lower the ratio, the higher the financial stability</td> </tr> </table>	K _f =0.31	K _f =0.31	K _f =0.27	financial position of the insurance company is sustainable because financial stability ratio is low; the lower the ratio, the higher the financial stability		
K _f =0.31	K _f =0.31	K _f =0.27								
financial position of the insurance company is sustainable because financial stability ratio is low; the lower the ratio, the higher the financial stability										

The following methods of forecasting sales are most often used in economic practice:

- Methods of expert estimates (refer to the intuitive prediction methods, i.e., forecast made by this method is based on subjective opinion of the gathered experts; do not allow to make a precise forecast, so they are not applied in this study);
- Methods of analysis and forecasting of time series (allows to make one of the most accurate sales volume forecasts based on the ratio of a small number of factors, so this method is most preferred to use);
- Casual methods (search and analysis of various groups of factors that affect the future work of the company are carried out; factorial signs must be defined, their changes must be evaluated and the relationship between them and the volume of sales must be determined; they are based on the analysis of statistics, the result of the forecast will be more accurate; these methods refer to multivariate prediction, and correspondingly require more data for forecast and cannot be applied in this study).

The main result of the study will be an attempt to use a well-known methodology of forecasting activities of the regional insurance organization in order to increase its effectiveness (adapting existing methods of forecasting time series with respect to forecasting sales volumes of the insurance company).

RESULTS

To analyze and forecast sales volume of the insurance organization, the study used a model of exponential smoothing (Holt-Winters multiplicative model with a factor of trend deterrence for forecasting time series based on an assessment of the trend and seasonality), because a preliminary analysis of the dynamics of sales volume of the leading regional insurance company showed that seasonal deviations from the original series are characterized by stable percentage rate changes.

Using the multiplicative Holt-Winters model in our study makes it possible to obtain an estimate of the parameters of the trend that characterizes not the average level of the process but the trend prevailing by the time of the last observation; at a well-defined seasonal cycle and maintained trend in the forecast period, this model is able to give

very good results. To make a forecast by the reasonably chosen model, it is necessary to determine:

- 1) Exponentially smoothed series;
- 2) Assessment of the trend;
- 3) Assessment of seasonality.

Exponential equalization always requires the previous value of the exponential average. When the process is just beginning, there must be some value $\hat{a}_{1,0}$, which can be used as a value preceding $\hat{a}_{1,t}$. If the past data are available by the beginning of the equalization, an arithmetic average of all available points or any their part of the entry-level series can be used as the initial value $\hat{a}_{1,t}$.

To estimate the initial values of the exponentially smoothed series and trend assessment to the first 24 values (sales volume data for each month for 2012 and 2013), let's define the coefficients of the linear equation (1) $\hat{a}_{1,0}, \hat{a}_{2,0}$ using formulas (2) and (3).

$$\hat{x}_\tau(t) = \hat{a}_{2,0} + \hat{a}_{1,0} \cdot t \tag{1}$$

$$\hat{a}_{1,0} = \frac{\sum_{t=1}^n (x_t - x_{cp}) \cdot (t - t_{cp})}{\sum_{t=1}^n (t - t_{cp})^2} \tag{2}$$

$$\hat{a}_{2,0} = x_{cp} - \hat{a}_{1,0} \cdot t_{cp} \tag{3}$$

where x_{cp} – average value of series x_{ti}

t_{cp} – average value of t ;

$\hat{x}_\tau(t)$ – forecast made at the t moment for τ time units (steps) ahead.

The values of the linear model for the first 24 values allow to estimate the approximate values of estimates of seasonality by months. For small values of t , the argument of functions $\hat{f}_{t-1+\tau}$ will be negative. The values of the coefficients of seasonality for negative values of the argument are calculated using formula (4).

$$\hat{f}_{t+k-\tau} = \frac{\left(\frac{x_t}{\hat{x}_\tau(t)} + \frac{x_{t+\frac{n}{2}}}{\hat{x}_\tau\left(t+\frac{n}{2}\right)} \right)}{n}. \tag{4}$$

Estimates of seasonality for positive values of the argument ($f_1, f_2, \dots, f_{35}, f_{36}$) are calculated using formula (5).

$$f_t = \alpha_2 \cdot \frac{x_t}{\hat{a}_{1,t-1}} + (1 - \alpha_2) \cdot \hat{f}_{t-1} \quad (5)$$

Let's calculate the value of the exponentially smoothed series on the basis of estimates of the seasonality using formula (6) and present the results in Table 5.

$$\hat{a}_{1,t} = \alpha_1 \cdot \frac{x_t}{f_{t-1}} + (1 - \alpha_1) \cdot (\hat{a}_{1,t-1} + \varphi \cdot \hat{a}_{2,t-1}) \quad (6)$$

Table 5: Values of the exponentially smoothed series and estimates of the trend from 2012 to 2014.

Year	T	Month	\hat{x}_t ,	$\hat{a}_{1,t}$	$\hat{a}_{2,t}$
	0			10712378	2185
2012	1	January	8687399	10731008	2256
	2	February	8644386	10716047	-1090
	3	March	10879256	10771050	5304
	4	April	11236284	10814094	5259
	5	May	14936598	10808831	420
	6	June	10837925	10799846	-823
	7	July	9841036	10922498	12117
	8	August	13896425	10888527	-1216
	9	September	11089564	10859654	-3106
	10	October	10562283	10836691	-2855
	11	November	9812631	10818797	-2303
	12	December	9635498	10805007	-1794
2013	13	January	8564823	10762492	-4574
	14	February	8766961	10780349	962
	15	March	10364133	10684925	-9369
	16	April	10728564	10617866	-8392
	17	May	14805746	10634775	180
	18	June	10787536	10656327	2188
	19	July	8679091	10468713	-18368
	20	August	13896425	10543851	4208
	21	September	11089564	10603065	6679
	22	October	10562283	10647260	5622
	23	November	9812631	10679681	4254
	24	December	9635498	10703286	3126
2014	25	January	6072438	10084402	-61326
	26	February	7445401	9891303	-30349

27	March	8598174	9667981	-27795
28	April	7754505	9257147	-46086
29	May	12137416	9144398	-19571
30	June	7755890	8847157	-33247
31	July	7582989	8873834	-3317
32	August	9680464	8576117	-30369
33	September	12253672	9209397	57862
34	October	10342201	9468486	36324
35	November	10620875	9897839	49474
36	December	12320644	10668009	85922

The forecast can be calculated at a known sales volume for one period ahead for January 2012 – December 2014.

At an unknown sales volume, we can calculate forecast for 2015 using formula (7) and reflect it in Table 6.

$$\hat{f}_{t+k-\tau} = \frac{\left(\frac{x_t}{\hat{x}_\tau(t)} + \frac{x_{t+\frac{n}{2}}}{\hat{x}_\tau\left(t+\frac{n}{2}\right)} \right)}{n}. \quad (7)$$

Table 6: Forecast of the sales volume at unknown values of sales volume of the regional insurance company for 2015 in rubles.

Year	Month	τ	Forecast
2015	January	1	6844955.4
	February	2	8162626.9
	March	3	9687532
	April	4	9333722.4
	May	5	14328749
	June	6	9668739.7
	July	7	9124042.1
	August	8	12487620
	September	9	13650942
	October	10	11509361
	November	11	11201597
	December	12	11880134

To assess the accuracy of the forecast, let's build the chart in Figure 3.

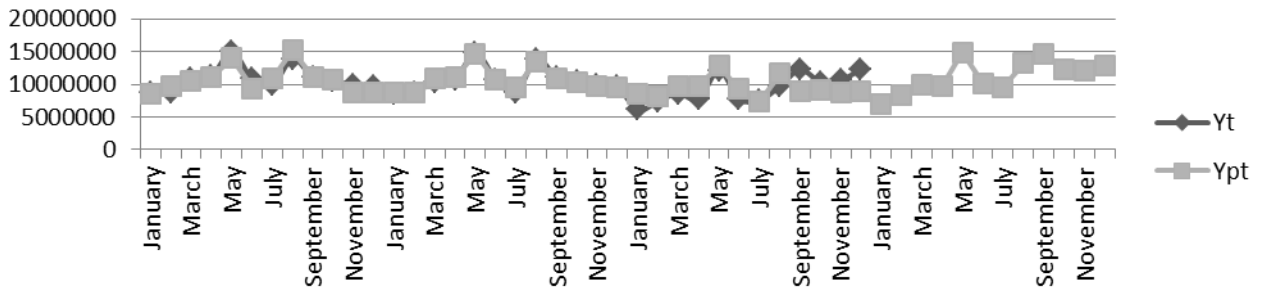


Figure 3: Actual and estimated figures of sales volume of the regional insurance company in Primorsky Krai, rub.

Figure 3 shows that the calculated data correspond well with the actual data, which indicates the high quality of the forecast. To assess the quality of the model, let's calculate the absolute error of the forecast data obtained at known values using formula (8).

$$\varepsilon_t = | \hat{x}_t(t) - x_t | \tag{8}$$

$$\varepsilon_t = |370317209 - 370701338| = 384128.$$

It is also necessary to calculate the relative error using formula (9):

$$\bar{\varepsilon}_t = \frac{\varepsilon_t}{x_t} \tag{9}$$

$$\bar{\varepsilon}_t = \frac{384128}{370317209} \cdot 100\% \approx 0,01\%$$

The Holt-Winters multiplicative model allowed to make a forecast for 2015 with a relative error of 0.01%, which is quite a good result. Thus, from 2012 to 2015, there was a decline in sales by 13% (taking into account total volume of sales per year).

Since the data for 2015 on financial and economic activities of the regional insurance company under study have not been represented in the official sources, the authors have the data only for the first two months of 2015 (January and February), which are presented in Table 7.

Table 7: Comparison of actual and expected performance of the insurance company for adjustment of the forecast.

Performance indicators	Actual performance	Forecast	Absolute error	Relative error
January	5,845.41766	6,844	998.58234	17.08%
February	8,588.09327	8,162	426.09327	4.96%
2012-2015	370,317,209	370,701,338		

	370,331,642.5	370,716,344		
Absolute error	384,701.4891			
Relative error	0.10%			

When checking the forecast for the first two months of 2015 the multiplicative Holt-Winters model allowed to make a forecast with a relative error of 0.1%, which is a good result. If we consider the relative error for each period (month), it can be seen that in January the error is equal to 17.08%, which is not a bad result, but still insufficiently low. In February the error is rather small, thus, the forecast is sufficiently accurate. Thus, the data calculated on the basis of the forecast are almost consistent with trends prevailing in the actual activity of the company. Based on the data it can be assumed that trends of consideration of possible crises associated with changes in economic and political factors are inherent in the insurance industry.

DISCUSSION

After analyzing the economic performance of the insurance company, it may be concluded that regardless of reducing the amount (number) of insurance contracts concluded, the frequency of insurance claims increases. In this case, it is required to increase sales volume in order to reduce the compensation ratio and increase the profitability of the company. Doing so requires:

- To expand the market to sell the service;
- To take measures to increase demand for services produced.

Average insurance coverage is an average value of the insured property established by law or an insurance contract and intended to establish the size of the insurance premium and the amount of insurance compensation. From 2013 to 2014, the average insurance coverage increased from 156.01 thous. rub. up to 162.02 thous. rub., i.e., by 4%.

Based on the above data, the loss ratio of the insurance coverage was calculated. This indicator must always be less than 1, otherwise the figure would mean that all insured objects were destroyed more than once. Loss ratio of the insurance coverage was fairly low in 2013 and 2014. In this case, it means that the ratio of the payments of insurance compensation to the insurance coverage of the insured object is low, therefore, the loss ratio is also low.

Financial stability ratio is a measure of the financial stability of the insurance company [34,35]. It is calculated using the loss ratio of the insurance coverage and the total number of insured objects or concluded agreements. In 2014, just like in 2013, the ratio of financial stability is negligible, therefore, it can be concluded that the company is financially stable.

According to some scientists, forecasting sales using the Holt-Winters multiplicative model of exponential smoothing gives good results and allows to create a vision of the future developments [36-38]. On the basis of foreign studies, it may be noted that the difficulty of the construction of the Holt-Winters multiplicative model of exponential smoothing lies with selection of the smoothing parameters that can directly or indirectly influence the results of the forecast [39,40]. The models obtained in the course of the study and data calculated on them can be used in the future to generate control and management of sales volumes in the regional insurance company, as well as to calculate the coefficients of the financial condition of the company, which will allow to track the decline in yield [40-44].

CONCLUSION

The conducted study allows to make the following conclusions:

- Analysis of sales volume based on the methods of comparison, selection of "bottlenecks", method of the dynamic series and economic analysis allows to control the dynamics of sales volume and the development of measures that ensure its successful growth. The comparison method revealed the decline in sales from 2012 to 2014 by 13% and identified the main reasons for the decline. To identify the size, nature and pace of change in the analyzed objects, the method of time series was used. This method allowed to find out that regardless of the type of insurance, there is a pattern in the dynamics of sales by quarters, i.e., there is a low volume of sales in Q1 of each year, on the basis of which it was concluded that the demand depends on seasonality.
- Method of selection of "bottlenecks" allowed to identify the type of insurance that hinders improvement of production efficiency. This type of insurance is property insurance "Construction", as it is this type of insurance that saw the largest decline in sales by 14%.
- Economic analysis of sales volume based on the absolute, average and relative figures provided information about the low coverage of the insurance field, the average figures of the insurance coverage and compensations, low loss ratio of the insurance coverage and financial stability of the company.

The application of the model for analyzing the activities of insurance companies has not been evaluated in the article. Methodology proposed in the article will be further clarified and adapted to the products of other insurance companies.

Thus, the proposed methods of forecasting sales volume of insurance services on the example of the regional insurance company of Primorsky Krai will allow to actively use them in the financial practices of many insurance companies.

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