

THE STUDY OF STRUCTURAL CHANGES IN THE LIFE INSURANCE PRODUCT PORTFOLIO AND PAYMENTS IN BULGARIA FOR THE PERIOD 2017 – 2021¹

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ABSTRACT

The object of life insurance is insured person's life, health and working capacity. In order to satisfy the interests of a wide range of consumers, insurers offer a variety of life insurance products that form their product portfolio. Its structure is built on the basis of relative shares of the offered life insurance policies. The portfolio structure is also indicative of consumers' preferences about particular type of insurance.

The largest part of the premium income for the various types of life insurance products is used to make insurance payments upon the occurrence of insurance events. The structure of insurance payments shows which of the offered life insurance policies take the largest share of insurers' funds.

The structure of the life insurance product portfolio and insurance payments is not static. It changes under the influence of various factors. The study of the market structures of gross written premiums and insurance payments by classes of life insurance is significant for insurers in order to know the state and trends on the life insurance market.

KEY WORDS: life insurance, product structure, insurance payments, structural changes

JEL codes: G22, G52

¹ original research paper

INTRODUCTION

The significance of life insurance is expressed in financial support to the insured persons and their families upon occurrence of events predetermined in the insurance contract – death, reaching a certain age, permanent or temporary disability, death or disability caused by an accident, medical expenses and medicines, childbirth, marriage, continuing education and others (Erusalimov & Paneva, 2019). When an insured event occurs, if the clauses of the insurance policy are met, the insurer makes an insurance payment that is equivalent to the sum insured or part of it. Depending on the class of insurance, the sum insured is received by the beneficiaries upon the death of the insured person or by the insured person himself/herself, if he/she is alive at the end of the insurance policy term. When there is a loss of ability to work, the insurance payment is a percentage (part) of the sum insured.

The purpose of the present study is to outline the structural changes in the product portfolio and in the insurance payments of the Bulgarian life insurance companies during the chosen period of analysis and to assess their strength. To achieve this purpose, the following research tasks have been formulated:

- formation of the product portfolio structure in life insurance by calculating the market shares of the individual classes of life insurance;
- formation of the life insurance payments structure by calculating the relative shares of insurance payments by individual classes of life insurance;
- establishing the changes in the positions of the different classes of life insurance in the product structure and in the structure of insurance payments;
- characterising the strength of the outlined changes in both structures.

The identification of structural changes and their intensity provides an opportunity to look for and to outline the possible reasons for them. As a result, insurers will have the information they need for analysis and conclusions on the basis of which to take adequate action given the identified changes and trends.

DATA AND METHODOLOGY

The structure of life insurance product portfolio is formed on the basis of the market shares of the individual classes of insurance products in the total amount of the gross written premiums in life insurance. The structure of life insurance payments is formed on the basis of the relative shares of the individual classes of insurance in the total amount of the life insurance companies' payments.

The assessment of structural changes is made by monitoring the dynamics in the distribution of gross written premiums and insurance payments by classes of life insurance. Based on a comparative analysis, it is shown whether and how the importance of different life insurance products is changing. The strength of structural changes is shown by calculating the integral coefficients of structural changes in two variants – on fixed base (2017) and chain variants (Gatev, 2007). The indicator provides an opportunity to establish the degree of difference of the observed structures during the individual analysed years and to track the changes of these differences over time. In the study, the classes of life insurance are presented according to the classification used by the Financial Supervision Commission in collecting and presenting statistical data on the Bulgarian insurance market. During the period (2017-2021), life insurance companies in Bulgaria report gross written premiums under the following classes of insurance: endowment insurance; term insurance; pension insurance (annuities); marriage and birth insurance; unit linked life insurance; supplementary insurance; accident insurance; sickness insurance.

The analysis in the study covers the period 2017-2021 and is based on official statistical data for the realised annual gross written premiums and the insurance payments in the life insurance, published by the Financial Supervision Commission on its website (Financial Supervision Commission, 2022).

In presenting the structural changes, assessing their strength and outlining the possible reasons for their occurrence, traditional research methods have been used – historical method, methods of deduction and induction, methods of analysis and synthesis, descriptive analysis, comparative analysis and structural analysis.

ANALYSES AND RESULTS

STRUCTURAL CHANGES IN THE LIFE INSURANCE PRODUCT PORTFOLIO

The premium income structure for the different types of life insurance offered on the Bulgarian insurance market during the observed period is shown in Table 1.

Table 1. Life insurance product portfolio structure (in %)

Classes of insurance \ Year	2017	2018	2019	2020	2021
Endowment insurance	32.48	28.47	25.08	26.80	19.68
Term insurance	21.10	21.13	18.93	16.05	14.07
Pension insurance (annuities)	8.02	5.68	5.08	4.73	3.16
Marriage and birth insurance	2.18	2.19	1.58	1.64	1.13
Unit linked life insurance	16.29	17.21	18.31	24.56	40.43
Supplementary insurance	4.87	5.07	5.46	7.64	6.13
Accident insurance	4.39	4.45	3.66	3.13	2.63
Sickness insurance	10.67	15.80	21.90	15.45	12.77

Source: Authors' calculations based on the Financial Supervision Commission data

The given data show that in the structure of the gross written premium income of the life insurers, endowment insurance has the largest market share until 2020. This is a traditional insurance product for the Bulgarian life insurance market and it is a main source of premium income. The fact that, according to this insurance policy, there is an unconditional (certain) payment of the sum insured², prioritizes the interest of consumers towards it. During the period of analysis, however, a constant decrease in its market

²Insurers pay out the sum insured both if the insured person dies during the term of the insurance contract and if he/she survives it.

share is observed – by almost 13 points compared to the base year 2017 (1.7 times). In 2021, an interesting change is observed in the market position of endowment insurance. It has been ousted from its long-time leadership position by unit linked life insurance.

Term insurance is another traditional insurance product preferred by Bulgarian consumers. It provides financial support to the entitled persons in the event of the death of the insured. In the first two years, it took second place in the analysed structure. However, consumer interest in this insurance is waning. Its market share is almost constantly decreasing and insurance product is losing its market positions. For the entire period, the decrease is 7 points compared to the base year (1.5 times).

A significant source of gross written premium income for the period 2017-2021 is unit linked life insurance. It is the only life insurance that has a consistent increase in market share. The yield on deposits, which are traditionally the preferred financial product of Bulgarian consumers, is almost zero. Thus, this insurance turned out to be a suitable instrument, providing simultaneous satisfaction of the insurance interests and the desired investment yield. The development of insurance product in the last two observed years is particularly strong. Under the influence of the coronavirus crisis and the inflationary processes in the country, Bulgarian consumers became more aware of the uncertainty in which they live and began to think more about their security and future income. For the entire period of analysis, the market share of unit linked life insurance grew 2.5 times, and in 2021 it became the leader in the Bulgarian life insurance market.

Sickness insurance has developed intensively in the first three observed years. In 2019, its market share doubled compared to the beginning of the period, and insurance product occupies the second most important place in the product portfolio of Bulgarian insurers. After that, however, its market position worsened. Despite the coronavirus crisis, which created the need to treat the disease and to provide funds for medical expenses, Bulgarian consumers did not recognize insurance as a product that could provide them with the necessary insurance protection in case of illness. In addition, the pandemic has caused business activity to be restricted and jobs to be closed, which has had an impact on incomes. People have rethought its consumption pattern, even in terms of their health. If it is impossible to allocate funds for additional health insurance, it is relied only on the health care guaranteed by the state. It is also important to note that, according to Bulgarian legislation,

sickness insurance can also be offered by non-life insurance companies, which naturally affects its market performance on the life insurance market. Pension insurance in Bulgaria is part of the third pillar (intended for additional voluntary pension insurance) of the three-pillar insurance model introduced in the country in 2000. Its implementation was aimed at overcoming the difficulties experienced by the state pension system in relation to the maintenance of the population from the third age, caused by: the decline in the birth rate; the reduction of the working-age population; unemployment; the existence of a grey economy; the insufficient amount of income from insurance contributions; the increase in the number of old people; increased life expectancy. There is an additional burden on working persons, employers and the state, as fewer and fewer workers and insured persons have to guarantee the lifetime pensions of a growing number of elderly people. With the implementation of the multi-column insurance model, the personal participation of individuals in the provision of pension income has been strengthened. Today's workers need to rely more on themselves instead of the government and save more during their active working life to have enough funds for a longer retirement life.

Although pension insurance is a suitable alternative source of additional pension income, it is still not sufficiently well developed in Bulgaria. The data in Table 1 show not only a weak market presence, but also a constantly decreasing market share, and for the entire observed period the decrease is more than 2.5 times. The reasons for this can be found in the still strong role of the state in providing retirement benefits, as a result, consumers are not motivated to take personal responsibility for providing additional income after ending their active employment. The unsatisfactory income of the Bulgarian population also does not stimulate consumers to take out voluntary pension insurance. In addition, the activity of life insurance companies on this type of insurance is under competitive pressure from supplementary pension security companies that offer similar pension products.

Supplementary insurance is not a separate insurance product. It is an addition to endowment insurances, term insurances, pension insurances, unit linked life insurances, and marriage and birth insurances. This type of insurance policy provides additional coverage for: personal injuries (including loss of ability to work); death caused by an accident; disability caused by accident or illness. The realised gross written premium income, resp. its market share, are influenced by consumers' interest in the basic insurance and by their desire to include additional risk coverage to it.

Supplementary insurance has a constantly growing market share until 2020. After that, a certain decrease is observed, but while preserving its market performance.

The last two positions in the product structure are permanently occupied by accident insurance and marriage and birth insurance, respectively. Apart from their small contribution to the formation of life insurance gross written premium income, there is also a decrease in their relative shares – both in relation to the beginning of the analysed period and in relation to each of the analysed years (with certain exceptions).

The comparative analysis of the market positions of the life insurance products offered on the Bulgarian market shows that there are changes in their market shares and their positions in the product structure. To measure the degree of difference, integral coefficients of structural changes are calculated. Their values are shown in Table 2.

Table 2. Coefficients of structural changes of the product structure

Year	Coefficients on fixed base	Coefficients on chain variants
2017	-	-
2018	0.1122	0.1122
2019	0.2272	0.1223
2020	0.2083	0.1602
2021	0.4328	0.2708

Source: Authors' calculations based on the Financial Supervision Commission data

Based on the values of the integral coefficient of structural changes (Petrov, Todorov, & Ivanov, 2009, p. 370), calculated relative to the base year 2017, there is a tendency for the product structure of life insurance to move away from its original structure in individual years. In 2018, moderate structural changes occurred, in the following two years of the observed period – significant structural changes, and in the last year there were strong changes in the product structure.

The estimated chain values of the integral coefficient of structural change show an increasing divergence between the product structure in a given year compared to the previous one. In 2018, 2019 and 2020, moderate structural changes were established, with the coefficient of structural changes constantly increasing. The highest chain value of the integral coefficient of structural changes is reported in 2021, and the changes are characterised as significant. In this year, only unit linked life insurance registered an increase in its market share, while all other life insurances lost market position.

The values of the coefficient of structural changes outline even more clearly the changes in the product structure of Bulgarian life insurance described above in the expose. During the observed years, most insurance products change their places, which also affect the magnitude of the integral coefficient of structural changes.

STRUCTURAL CHANGES IN THE LIFE INSURANCE PAYMENTS

The structure of insurance payments for different types of life insurance for the analysed period is shown in Table 3.

Table 3. Life insurance payments structure (in %)

Classes of insurance \ Year	2017	2018	2019	2020	2021
Endowment insurance	50.3 4	46.6 7	41.1 6	43.6 5	40.1 5
Term insurance	7.88	8.66	8.42	8.49	12.6 2
Pension insurance (annuities)	16.5 8	15.3 0	13.9 1	11.3 8	9.44
Marriage and birth insurance	2.18	3.06	3.01	2.65	2.66
Unit linked life insurance	8.85	8.54	6.92	14.9 7	16.1 5
Supplementary insurance	2.48	2.99	3.03	3.11	2.96
Accident insurance	1.34	1.53	1.40	1.27	0.88
Sickness insurance	10.3 5	13.2 5	22.1 5	14.4 8	15.1 4

Source: Authors' calculations based on the Financial Supervision Commission data

Before analysing the life insurance payments structure, it should be noted that a direct link cannot be sought between it and the product structure. The reason for this is the long-term nature of classic life insurance. Therefore, payments in a given year are made in connection with insurances concluded mainly in previous years. Therefore, it is not necessary that insurances with a strong market presence during the period also to have a significant share in insurance payments.

The data presented in Table 3 show that the endowment insurance has the largest share in insurance payments (on average about 45%). As already mentioned, it is an insurance policy with high consumer interest, and not only during the analysed period. The insurance retains its leading place in the structure of insurance payments during the five analysed years. During the period, however, its share decreased by 10 percentage points.

A significant part of life insurance payments – about 50% on average for the analysed period – are intended for other traditional insurances for the Bulgarian market – term insurance, pension insurance (annuities), unit linked life insurance and sickness insurance.

During the first two years of the analysed period, pension insurances were the second in terms of relative share in the life insurance payments structure. They then give way to sickness insurances and unit linked life insurances. Pension insurance policies play a smaller and smaller role in the formation of payments to insured persons, as a result of which their share is constantly decreasing.

The development of sickness insurance is intensive. For the first three years, its share in the structure of insurance payments increased more than 2 times, as a result of which it became the second most important. In 2020, the position of this insurance product worsened and it was replaced by unit linked life insurance. In the last observed year, the trend in sickness insurance became positive again, maintaining its positions in the structure of insurance payments.

Until the middle of the period 2017-2022, unit linked life insurance does not participate significantly in the structure of insurance payments. In the last two years, however, its position has changed sharply, and it is the second most important factor in the formation of insurance payments for life

insurance. Its share compared to the initial year has almost doubled.

As for term insurance product, while its share in the product structure is almost constantly decreasing, with regard to insurance payments, its relative share is increasing both compared to the base year 2017 and to each previous year of the period (except 2019). Marriage and birth insurance, supplementary insurance and accident insurance do not make a significant contribution to the formation of insurance payments. Their total share on average for the analysed period is about 7%. There is no clear trend in the change of their shares in the life insurance payments structure.

Tracking the dynamics in the relative shares of individual types of life insurance products in the structure of insurance payments, it is found that this structure is not static. This gives reason to trace the intensity of structural changes by means of the integral coefficient of structural changes. The coefficient values calculated on fixed base and on chain variants are presented in Table 4.

Table 4. Coefficients of structural changes of the payments structure

Year	Coefficients on fixed base	Coefficients on chain variants
2017	-	-
2018	0.0659	0.0659
2019	0.2054	0.1472
2020	0.1504	0.1639
2021	0.2162	0.0844

Source: Authors' calculations based on the Financial Supervision Commission data

The values of the integral coefficient of structural changes, calculated in relation to the base 2017, show an almost constant deviation in the life insurance payments structure over individual years from their primary structure. It is found that weak structural changes occurred in 2018. Changes in the insurance payments structure of life insurance companies in 2019 were significant. This is mainly due to a double increase of the relative share of sickness insurance. In 2020, there were moderate structural changes, and in the last year structural changes were significant again. The reason can be

pointed to a noticeable increase in the share of unit linked life insurance, term insurance and sickness insurance, combined with a decrease in the shares of pension insurance and accident insurance.

The calculated chain values of the integral coefficient of structural changes show that in 2018 and 2021 there were weak changes in the life insurance payments structure compared to their values in previous years. It is found that there are no significant shifts in the positions of the individual life insurances and the dynamics in their relative shares is not strongly expressed. In 2019, a more significant divergence of the structures is reported, and the changes are characterised as moderate. Sickness insurance sharply increases its share by almost 10 points compared to the previous year, combined with moderate dynamics for other insurances. This reflects a double increase in the value of the coefficient of structural changes. In 2020, there are also moderate structural changes. Two opposite changes are observed – a double increase in the share unit linked life insurance, and a drop of 8 points in the share of sickness insurance, on the background of moderate dynamics in other insurances.

CONCLUSION

Based on the results of the study, it is found that during the analysed period there are changes in the preferences of Bulgarian consumers towards different types of life insurance products. The significance of individual insurances in the formation of insurance payments also changes. The studied dynamics of the relative shares of individual types of life insurance in the formation of gross written premium income and insurance payments and the established intensity of the structural changes allow the following conclusions to be made:

- ✓ The period 2017-2021 is characterised by changes in the product structure and in the insurance payments structure of Bulgarian life insurance companies.
- ✓ The divergence of the two observed structures is present both in relation to the base structures and in relation to the structures in the previous compared years.
- ✓ The changes in the product structure are more noticeable. During the period, many of the insurance products change their market positions. As a result, structural changes range from moderate to strong.
- ✓ During the period 2017-2021 endowment insurances, term insurances

and pension insurances mark a significant decline in their market shares. Unit linked life insurance is preferred by consumers.

- ✓ Changes in the life insurance payments structure are less pronounced. They range from slight to significant.
- ✓ Regarding insurance payments, no change is taken into account in the leading insurance by relative share. The largest part of the insurers' funds is for payments under endowment insurances.
- ✓ The most significant increase in the relative shares in the structure of payments compared to the beginning of the period is found in unit linked life insurance, term insurance and sickness insurance, and the largest decrease – in pension insurance and accident insurance.

It is necessary for insurers to monitor trends in consumer demand in order to be able to respond promptly to changed needs. Adequate actions are associated with offering new insurance combinations, changing some insurance parameters, serving a new consumer segment or a new market. It is also possible to terminate the offer of a certain insurance product in the absence of consumer interest. Another possible response is to focus efforts on promoting underrepresented insurances in order to improve their market positions. On the other hand, the awareness of insurers regarding the contribution of individual types of life insurance products in the formation of gross written premium income will guide them regarding their significance in making future insurance payments.

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