KONRAD ROJEK
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The impact of the systemic competitiveness of the economies of the Visegrad Group countries on the development of their non-life insurance markets in 2004–2020

The aim of the article is to assess the impact of selected factors of systemic competitiveness of the Visegrad Group economies on the development of their non-life insurance markets in 2004–2020. The study analyzes the literature on the subject, as well as the methods of descriptive statistics and econometric analysis, for the needs of which synthetic indicators of the development of non-life insurance markets of the analyzed countries were constructed.

Based on the conducted research, it was found that Poland's position within the Visegrad Group in terms of the development of the non-life insurance market was leading, despite the fact that the Czech Republic was characterized by the highest level of systemic competitiveness. Moreover, there were similarities between the markets of both countries. They were shaped in a positive, statistically significant way by the same components of systemic competitiveness (property rights and freedom of the labor market). The next places were taken by the Hungarian and Slovak markets.

Keywords: non-life insurance market, systemic competitiveness, econometric modelling, Visegrad Group

Introduction

Insurance plays a very important role in the modern economy. Through its functions, it generates many positive socio-economic effects. As a consumption stabilizer, it guarantees the proper participation of households in the market economy and society. Insurance mobilizes private savings

and has a positive impact on the labor market – as it plays the role of a significant employer. Moreover, they are a key pillar of the financial market, which is of fundamental importance in economic development. The functioning of the insurance market also contributes to mitigating economic shocks. It is also an significant factor catalyzing GDP growth. Thanks to insurance, economy becomes more competitive. Due to great importance of insurance for economy, it is crucial to appropriately stimulate the development of this sector.

Due to its importance for economy, the phenomenon of insurance market development has been subjected to many studies and analyses. The state of knowledge in this area is very extensive. However, there is a lack of analyzes examining the relationship between the development of this market (specifically non-life insurance) and systemic competitiveness. Moreover, the literature on the subject lacks research that would construct synthetic indicators of the development of the insurance market.

The aim of the research is to assess the impact of selected factors of systemic competitiveness of the economies of the Visegrad Group countries[1] on the development of their non-life insurance markets in 2004–2020. Achieving this goal will make it possible to identify which systemic competitiveness factors supported the development of these markets and which were a limitation. And therefore, what should we pay attention to in the case of the Polish market to stimulate its growth. The choice of the V4 is determined by many similarities between the associated countries. They share similar political and economic goals. They are also in the same cultural circle, which, apart from economic aspects, is an important determinant of the insurance market.

The study included an analysis of the literature and the methods of descriptive statistics and econometric analysis were used, for which synthetic indicators of the development of non-life insurance markets of the analyzed countries were constructed – consisting of the value of gross premiums written, density and market penetration indicators, as well as the number of insurance companies. The zero-unitarization method was used to create synthetic indicators. These indicators were explained variables. The predictors were selected factors of systemic competitiveness. All constructed econometric models were tested. Their results indicate that the conclusions formulated on their basis are most likely correct.

1. Literature review

1.1. Development of the insurance market and its determinants

The development of the insurance market is a category characterized by high complexity. The perception of this phenomenon may be based on a high degree of generality, according to which this development can be understood as various aspects of the changes taking place in this area[2]. The description of this phenomenon can also be aimed at defining it more precisely, e.g. as a key factor in the financial development of the economy and, more broadly, as a determinant of long-term economic growth (although still at a certain level of generality). There are also more precise attempts to describe this phenomenon – insurance development is a long-term process of

1. Also hereinafter referred to as „V4"
2. Handschke J., *Polskie doświadczenie w formowaniu i rozwoju rynku ubezpieczeń – wybrane aspekty*, „Wiadomości Ubezpieczeniowe", 2009 Nr 3, s. 56–69.

"improving the insurance market, insurance institutions and instruments, aimed at increasing the volume of insurance transactions and increasing their effectiveness"[3].

Regardless of the definitions, in the practical sphere, the development of insurance most often occurs primarily in the form of an increasing number of insurance products, their growing availability and an increase in the value of insurance premiums. Therefore, the process of assessing insurance development is based primarily on three measures[4]:

- the value of gross written premiums and the dynamics of their growth;
- insurance density index;
- insurance penetration rate.

It is accepted in the literature on the subject that the development of insurance markets is determined by many different factors. The most often included factors are as follows:

- economic;
- demographic
- social and cultural;
- structural.

Many studies have shown that individual factors may influence the development of the insurance market in both positive, negative and ambiguous ways. The economic factors that have a positive impact on the insurance market include, above all, society's income. This applies to both disposable and permanent income. As society becomes more affluent, the demand for insurance increases. This applies to both life insurance and non-life insurance. An increasingly wealthy society allocates more and more resources to protect its life and accumulated wealth. There is a positive correlation here. This relationship was noticed by, among others, Fortune (1972), Outreville (1980, 1985, 2011), Beck & Webb (2003), Li et al. (2007), Chien-Chiang Lee & Chiu (2012)[5]. However, the

3. Bednarczyk T. H., *Ekonomiczne i instytucjonalne czynniki rozwoju ubezpieczeń*, „Wiadomości Ubezpieczeniowe", 2011 Nr 4, s. 86.

4. Li D., Moshirian F., Nguyen, P., Wee T., *The demand for life insurance in OECD countries*, "The Journal of Risk and Insurance", 2007 Vol. 74(3), pp. 637–652; Bednarczyk T. H., *EkonomiczneE*, op.cit., pp. 85–106; Beck T., Webb I., *Economic, demographic, and institutional determinants of life insurance consumption across countries*, "World Bank Economic Review", 2003 No. 17(1), pp. 51–88; Pye R., *The evolution of financial services in transition economies: An overview of the insurance sector*, "Post-communist Economies", 2005 Vol. 17(2), pp. 205–223; Han L., Li D., Moshirian F., Tian Y., *Insurance development and economic growth*, "Geneva Papers on Risk and Insurance", 2010 Vol. 35(1), pp. 183–199; Kurylo V., Kurylo L., Zhovnirchyk Y., Kartashov Y., Sokol S., *The development of the insurance market of Ukraine amid the global trends in insurance*, "Investment Management and Financial Innovations", 2017 No. 14(1), pp. 14–27; Bukowski S.I., Lament M., *Impact of foreign capital on the insurance market development in the Visegrad Group countries*, "Journal of Management and Financial Sciences", 2019 Vol. XII, No. 38, pp. 33–45; Idem, *Foreign capital impact on insurance market development in EU-15 countries*, "Entrepreneurial Business and Economics Review", 2020 Vol. 8, No. 3, pp. 205–219; Idem, *Wybrane determinanty rozwoju rynków ubezpieczeniowych krajów Unii Europejskiej w latach 1999–2019*, „Wiadomości Ubezpieczeniowe", 2022 Nr 4, pp. 61–73.

5. Fortune P., *A Theory of Optimal Life Insurance: Development and Test*, "The Journal of Finance", 1973 No. 28(3), pp. 587–600; Outreville, J. F., *Dépenses d'Assurances, Primes Encaissées: Une Approche Macroéconomique*, "Geneva Papers on Risk and Insurance", 1980 No. 5(17), pp. 3–44; Idem, *Indexed and Non-Indexed Insurance and the Growth on Group Life Insurance*, "Economics letters", 1985 No. 19(2), pp.149–153; Idem, *The Relationship Between Insurance Growth and Economic Development: 80 Empirical Papers for a Review of the Literature*, „Working Paper", 2011 No. 12, pp.1–52; Beck T., Webb I., *Economic*..., op. cit., pp. 51–88; Li D., Moshirian F., Nguyen, P., Wee T., *The demand*..., op. cit., pp. 637–652; Chien-Chiang Lee, Yi-Bin Chiu, *The*

price of insurance, the expected inflation rate and the unemployment rate have a negative impact. These elements have a negative impact on the level of wealth of the majority of society, and, therefore, also on the demand for insurance. High inflation and unemployment are phenomena that negatively affect long-term savings. Individual studies have also shown that the demand for insurance is more sensitive to changes in income than in prices. The demand for insurance services is relatively low in price elasticity. In their research, this relationship was demonstrated, for example, by: Mantis & Farmer (1968), Neumann (1969), Fortune (1973), Babbel (1985), Outreville (1985, 1990, 1996, 2011), Browne & Kim (1993), Browne et al. (2000), Beck & Webb (2003), Esho et al. (2004), Li et al. (2007), Ward & Zurbruegg (2000), Arena (2008), Wicka & Miedzik (2010)[6]. An ambiguous impact was found in the case of inequality in income distribution, real interest rates, or the impact of the stock market. This is confirmed by research done by Beenstock et al. (1985), Beck & Webb (2003), Lim & Haberman (2003), Li et al. (2007), Nakata & Sawada (2007), Sen (2008), Feyen et al. (2011), Wicka & Miedzik (2010), Chen et al. (2012)[7].

Similarly to economic factors, non-economic factors can also influence the development of insurance both positively and negatively. Demographic factors constituting stimulants include,

impact of real income on insurance premiums: Evidence from panel data, "International Review of Economics & Finance", 2012 Vol. 21(1), pp. 246–260.

6. Mantis G., Farmer R. N., *Demand for Life Insurance*, "The Journal of Risk and Insurance", 1968 No. 35(2), pp. 247–256; Neumann S., *Inflation and Saving through Life Insurance*, "The Journal of Risk and Insurance", 1969 No. 36(5), pp. 567–582; Fortune P., *A TheoryE*, op. cit., pp. 587–600; Babbel D., *The Price Elasticity of Demand for Whole Life Insurance*, „Journal of Finance", 1985, No. 40(1), pp. 225–239; Outreville, J. F., *IndexedE*, op. cit., pp.149–153; Idem, *The Economic Significance of Insurance Markets in Developing Countries*, „The Journal of Risk and Insurance", 1990, No. 57(3), pp. 487–498; Idem, *Life Insurance Markets in Developing Countries*, "The Journal of Risk and Insurance", 1996 No. 63(2), pp. 263–278; Idem, *The RelationshipE*, op. cit. pp.1–52; Browne M. J., Kim K., *An International Analysis of Life Insurance Demand*, „The Journal of Risk and Insurance", 1993 No. 60(4), pp. 616–634; Browne M. J., Chung J., Frees E. W., *International Property-Liability Insurance Consumption*, "Journal of Risk and Insurance", 2000 No. 67(1), pp. 73–90; Beck T., Webb I., *EconomicE*, op. cit., pp. 51–88; Esho N., Kirievsky A., Ward D., Zurbruegg R, *Law and the Determinants of Property-Casualty Insurance*, "Journal of Risk and Insurance", 2004 Vol 71(2), pp. 265–283; Li D., Moshirian F., Nguyen, P., Wee T., *The demand…*, op. cit., pp. 637–652; Ward D., Zurbruegg R., *Does Insurance Promote Economic Growth Evidence from OECD Countries*, "Journal of Risk and Insurance", 2000 No. 67, pp. 489–506; Arena M., *Does Insurance Market Promote Economic Growth? A Cross-Country Study for Industrialized and Developing Countries*, "Journal of Risk and Insurance", 2008 No.75(4), pp. 921–946; Wicka A., Miedzik A., *Rodzaje ubezpieczeń i czynniki decydujące o wyborze ubezpieczyciela*, „Zeszyty Naukowe SGGW, Polityki Europejskie, Finanse i Marketing", 2010 Nr 4(53), pp. 264–277.

7. Beenstock M., *Competitive Unemployment Insurance in the Market Economy, Economic Affairs*, 1985 No. 6(6), pp. 10–13; Beck T., Webb I., *EconomicE*, op. cit., pp. 51–88; Lim C. C., Haberman S., *Macroeconomic Variables and the Demand for Life Insurance in Malaysia*, Paper presented at the Oxmetrics Conference, City University London, Cass Business School 2003; Li D., Moshirian F., Nguyen, P., Wee T., *The demandE*, op. cit., pp. 637–652; Nakata H., Sawada Y., *Demand for non-life insurance: A cross-country analysis*, "CIRJE, Faculty of Economics, University of Tokyo", No. 461, pp. 1–8; Sen S., *Are life insurance demand determinants valid for selected Asian economies and India?*, Institute for Social and Economic Change, Paper for Presentation at Annual Meeting of APRIA, 2008, pp. 1–27; Feyen E., Lester R., Rocha R., *What Drives the Development of the Insurance Sector. An Empirical Analysis Based on a Panel of Developed and Developing Countries*, „Policy Research Working Paper", 2011 No. 5572, pp.1–43; Wicka A., Miedzik A., *RodzajeE*, op. cit., pp. 264–277; Chen P. F., Lee C. C., Lee C.F., *How Does the Development of the Life Insurance Market Affect Economic Growth? Some International Evidence*, "Journal of International Development", 2012 No. 24(7), pp. 865–893.

among other things: population size, number of family members and degree of urbanization. The population of a given country is actually the potential customers of the insurance market. The bigger population there is, the greater the opportunities for insurance companies to develop. If population growth is also accompanied by an increase in its income, it has a positive impact on the development of the insurance market. Urbanization is a factor that is also related to both population and income. Growing population strengthens urbanization processes. They are even more strengthened if they are accompanied by economic growth (also dictated by an increase in income). This correlation was confirmed by Mantis & Farmer (1968), Berekson (1972), Burnett & Palmer (1984), Ward & Zurbruegg (2000), Li et al. (2007), Nakata & Sawada (2007), Feyen et al. (2011), Kurdyś-Kujawska & Sompolska-Rzechuła (2019), and Abdul-Fatawu et al. (2019)[8]. However, it is difficult to find demographic factors in the literature on the subject that would clearly have a negative impact on the insurance market. Most studies show an ambiguous impact of gender, age structure, demographic dependency ratio and life expectancy. Evidence of this type of connection with the insurance market can be found in publications by authors such as Berekson (1972), Outreville (1996), Browne et al. (2000), Ward & Zurbruegg (2000), Szablicki (2002), Beck & Webb (2003), Hwang & Gao (2003), Esho et al. (2004), Hwang & Greenford (2005), Li et al. (2007), Sen (2008), Chui & Kwok (2008, 2009), Chen et al. (2012), Park & Lemaire (2011), Nowotarska-Romaniak & Ogrodnik (2011), Feyen et al. (2011), Sarkodie & Yusif (2015), Naradda Gamage et al. (2016), Bugajski (2017), Cheng & Yu (2018), Kurdyś-Kujawska & Sompolska-Rzechuła (2019), and Li et al. (2020)[9].

8. Mantis G., Farmer R. N., *Demand*..., op. cit., pp. 247–256; Berekson L. L., *Birth order, anxiety, affiliation and the purchase of life insurance*, "Journal of Risk and Insurance", 1972 No. 39, pp. 93–108; Burnett J. J., Palmer B. A., *Examining Life Insurance Ownership through Demographic and Psychographic Characteristics*, "The Journal of Risk and Insurance", 1984 No 51(3), pp. 453–467; Ward D., Zurbruegg R., *Does*..., op. cit., pp. 489–506; Li D., Moshirian F., Nguyen, P., Wee T., *The demand*..., op. cit., pp. 637–652; Nakata H., Sawada Y., *Demand*..., op. cit., pp. 1–8; Feyen E., Lester R., Rocha R., *What*..., op. cit., pp.1–43; Kurdyś-Kujawska A., Sompolska-Rzechuła A., *Determinants of demand for life insurance: The example of farmers from north-west Poland*, "Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu", 2019 No. 63(7), pp. 71–81; Abdul-Fatawu M., Logubayom, A. I., Abonongo, J., *Determinants of the demand for life insurance in the Northern Region of Ghana – A study of the Tamale Metropolis*, "The Journal of Risk Management and Insurance", 2019 No. 23(1), pp.52–69.

9. Berekson L. L., *Birth*..., op. cit., pp. 93–108; Outreville J. F., *Life*..., op. cit., pp. 263–278; Browne M. J., Chung J., Frees E. W., *International*..., op. cit., pp. 73–90; Ward D., Zurbruegg R., *Does*..., op. cit., pp. 489–506; Szablicki P., Growth and the Life Insurance Market, Vienna University of Business Administration and Economics, Working Paper, 2002; Beck T., Webb I., *Economic*..., op. cit., pp. 51–88; Hwang T., Gao S., *The determinants of the demand for life insurance in an emerging economy – the case of China*, "Managerial Finance", 2003 No. 29(5/6), pp. 82–96; Esho N., Kirievsky A., Ward D., Zurbruegg R, *Law*..., op. cit., pp. 265–283; Hwang T., Greenford B., *A Cross-Section Analysis of the Determinants of Life Insurance Consumption in Mainland China, Hong-Kong and Taiwan*, "Risk Management and Insurance Review", 2005 No. 8(1), pp. 103–125; Li D., Moshirian F., Nguyen, P., Wee T., *The*..., op. cit., pp. 637–652; Sen S., *Are*..., op. cit., 2008, pp. 1–27; Chui A. C., Kwok C. C, *National Culture and Life Insurance Consumption*, "Journal of International Business Studies", 2008 No. 39(1), pp. 88–101; Idem, *Cultural practices and life insurance consumption: An international analysis using GLOBE scores*, "Journal of Multinational Financial Management", 2009 No. 19(2), pp. 273–290; Chen P. F., Lee C. C., Lee C.F., *How*..., op. cit., pp. 865–893; Park S.C., Lemaire J., *The Impact of Culture on the Demand for Non-Life Insurance*, University of Pennsylvania, Wharton School Working Paper IRM, 2011; Nowotarska-Romaniak B., Ogrodnik H., *Determinanty zakupu ubezpieczeń majątkowych przez indywidualnych klientów*, w: *Ubezpieczenia gospodarcze i społeczne. Wybrane zagadnienia ekonomiczne*, red. Sułkowska W.,

In the literature on the subject, the socio-cultural and structural stimulants of the insurance market include primarily the level of education, financial development, the degree of market openness, and the enforcement of property rights. More educated communities have greater insurance awareness. This, of course, results in increased demand for insurance. In turn, financial development can be understood in two ways. As increasing income and enriching society (this was mentioned under economic factors), and as the development of the financial market, and, therefore, also the insurance market. It should, of course, be noted that both the first and second approaches to financial development are positively correlated. As for the degree of market openness, this factor has the same positive impact on every market. This increases the level of competitiveness and the quality of services. Due to the emergence of new insurance companies, the market is less concentrated. As for property rights, this is a key element of a well-functioning property insurance market. The awareness of asset protection and the certainty of having it contribute to a greater willingness to accumulate it. The more assets, real estate, etc., the greater the need to use the services of insurance companies to protect it not only with legal tools, but also materially against various risks. This phenomenon was described by Hammond et al. (1967), Burnett & Palmer (1984), Outreville (1990, 1996), Browne & Kim (1993), Ward & Zurbruegg (2000), Hwang & Gao (2003), Esho et al. (2004), Hwang & Greenford (2005), Li et al. (2007), Nataka & Sawada (2007), Arena (2008), Sen (2008), Chui & Kwock (2008, 2009), Curak et al. (2009), Avram et al. (2010), Han et al. (2010), Chen et al. (2012), and Feyen et al. (2011)[10]. The negative impact is

Wolters Kluwer business, Warszawa 2011, s. 65–74; Feyen E., Lester R., Rocha R., *What*…, op. cit., pp.1–43; Sarkodie, E. E., & Yusif, H. M., *Determinants of life insurance demand, consumer perspective – a case study of the Ayeduase-Kumasi Community*, "Business and Economics Journal", 2015 No. 6(3), pp. 1–4; Naradda Gamage S. K, Li Lin, Ihtisham ul HAQ, *Economic & Demographic Characterictics, Social Capital And Demand For Life Insurance: Evidence From Central Region Of Sri Lanka*, EcoForum, Stefan cel Mare, University of Suceava, Romania, Faculty of Economics and Public Administration – Economy, Business Administration and Tourism Department., 2016 No. 5(2), pp. 1–9; Bugajski K., *Rozwój rynku ubezpieczeń życiowych w Polsce w latach 2006–2015*, w: *Ubezpieczenia gospodarcze i społeczne w dobie przemian*, red. M. Cycoń i in., Fundacja Uniwersytetu Ekonomicznego w Krakowie, Kraków 2017, s. 60–77; Cheng J., Yu L., *Life and health insurance consumption in China: Demographic and environmental risks*, "The Geneva Papers on Risk and Insurance. Issues and Practice", 2018 No. 44(1), pp. 67–101; Kurdyś-Kujawska A., Sompolska-Rzechuła A., *Determinants*…, op. cit., pp. 71–81; Li G., Li Z., Lv X., *The ageing population, dependency burdens and household commercial insurance purchase: Evidence from China*, "Applied Economics Letters", 2020 No. 28(4), pp. 294–298.

10. Hammond J. D., Houston D. B., Melander E. R., *Determinants of Household Life Insurance Premium Expenditures: An Empirical Investigation*, "The Journal of Risk and Insurance", 1967 No. 34(3), pp. 397–408; Burnett J. J., Palmer B. A., *ExaminingE*, op. cit., pp. 453–467; Outreville J. F., *The Economic*…, op. cit., pp. 487–498; Idem, *LifeE*, op. cit., pp. 263–278; Browne M. J., Kim K., *An International*…, op. cit., pp. 616–634; Ward D., Zurbruegg R., *Does Insurance*…, op. cit., pp. 489–506; Hwang T., Gao S., *The determinants*…, op. cit., pp. 82–96; Esho N., Kirievsky A., Ward D., Zurbruegg R, *Law…,* op. cit., pp. 265–283; Hwang T., Greenford B., *A Cross*…, op. cit., pp. 103–125; Li D., Moshirian F., Nguyen, P., Wee T., *The demand*…, op. cit., pp. 637–652; Nakata H., Sawada Y., *Demand*…, op. cit., pp. 1–8; Arena M., *Does Insurance*…, op. cit., pp. 921–946; Sen S., *Are lifeE*, op. cit., pp. 1–27; Chui A. C., Kwok C. C, *National*…, op. cit., pp. 88–101; Idem, *Cultural*…, op. cit., pp. 273–290; Curak M., Loncar S., Poposki K., *Insurance Sector Development and Economic Growth in Transition Countries*, "International Research Journal of Finance and Economics", 2009 No. 34(1), pp. 29–41; Avram K., Nguyen Y., Skully M., *Insurance and Economic Growth: A Cross Country Examination*, Monash University, Dept of Accounting and Finance, Working Paper, 2010; Han L., Li D., Moshirian F., Tian Y., *Insurance*…, op. cit., pp. 183–199; Chen P. F., Lee C. C., Lee C.F., *How*…, op. cit., pp. 865–893; Feyen E., Lester R., Rocha R., *What Drives*…, op. cit., pp.1–43.

seen in religion (primarily Islam and life insurance), market monopolization and concentration, and political risk. The consequence of too much market concentration, and sometimes even monopolization, is most often an increase in insurance prices and a decline in the quality of services. Over time, the market becomes so dominated by certain companies that they create high entry barriers for potential competitors. Political risk, in turn, is the probability of disruption of business operations by political conditions. These may be decisions affecting the market or events determined by the political sphere. This applies both on a national and international scale. Political risk can also be identified with the institutional environment. This is confirmed by research by authors such as Outreville (1990, 1996), Browne & Kim (1993), Ward & Zurbruegg (2000), Beck & Webb (2003), Chui & Kwok (2008, 2009), Feyen et al. (2011), Park & Lemaire (2011), Chang & Berdiev (2013)[11]. However, non-economic factors whose impact on the insurance market is described as ambiguous in research include, among other things: include risk aversion (ambiguous towards positive), the presence of foreign companies and the legal system. This relationship was analyzed, among others, by researchers such as Burnett & Palmer (1984), Outreville (1990, 1996), Browne & Kim (1993), Browne et al. (2000), Park et al. (2002), Beck & Webb (2003), Esho et al. (2004), Li et al. (2007), Park & Lemaire (2011), Chang & Berdiev (2013), Fier & Carson (2015), Kurdyś-Kujawska & Sompolska-Rzechuła (2019)[12].

Based on a review of the literature on the subject, it can be concluded that the development of the insurance market is conditioned by many different factors. Both economic and non-economic factors play an important role in this process. However, their importance for individual markets is different. This is determined, for example, by the level of economic development of a given country. The higher it is, the less impact the non-economic factors have and the greater the impact of the economic determinants. This proves the already mentioned high complexity of the insurance market.

1.2. Systemic competitiveness

Economic, demographic, social, cultural and structural factors are variously determined by the efficiency of the economic system, i.e. systemic competitiveness. This is because the efficiency of this system is the most important element determining, *inter alia,* the efficiency of the use of

11. Outreville J. F., *The Economic* ..., op. cit., pp. 487–498; Idem, *Life* ..., op. cit., pp. 263–278; Browne M. J., Kim K., *An International* ..., op. cit., pp. 616–634; Ward D., Zurbruegg R., *Does Insurance* ..., op. cit., pp. 489–506; Beck T., Webb I., *Economic* ..., op. cit., pp. 51–88; Chui A. C., Kwok C. C, *National* ..., op. cit., pp. 88–101; Idem, *Cultural* ..., op. cit., pp. 273–290; Feyen E., Lester R., Rocha R., *What Drives* ..., op. cit., pp.1–43; Park S.C., Lemaire J., *The Impact* ..., op. cit., pp. 1–23; Chang C. P., Berdiev A. N., *Natural Disasters, Political Risk and Insurance Market Development*, "The Geneva Papers on Risk and Insurance. Issues and Practice", 2013 No 38(3), Special Issue on Disaster Reduction and Extreme Events, pp. 406–448.

12. Burnett J. J., Palmer B. A., *Examining* ..., op. cit., pp. 453–467; Outreville J. F., *The Economic* ..., op. cit., pp. 487–498; Idem, *Life* ..., op. cit., pp. 263–278; Browne M. J., Kim K., *An International* ..., op. cit., pp. 616–634; Browne M. J., Chung J., Frees E. W., *International* ..., op. cit., pp. 73–90; Park H., Borde S. F., Choi Y., *Determinants of Insurance Pervasiveness: A Cross-National Analysis*, "International Business Review", 2002 No. 11(1), pp. 79–96; Beck T., Webb I., *Economic* ..., op. cit., pp. 51–88; Esho N., Kirievsky A., Ward D., Zurbruegg R, *Law* ..., op. cit., pp. 265–283; Li D., Moshirian F., Nguyen, P., Wee T., *The demand* ..., op. cit., pp. 637–652; Park S.C., Lemaire J., *The Impact* ..., op. cit., pp. 1–23; Chang C. P., Berdiev A. N., *Natural* ..., op. cit., pp. 406–448; Fier S. G., Carson, J. M., *Catastrophes and the Demand for Life Insurance*, "Journal of Insurance Issues", 2015 No. 38, pp. 125–156; Kurdyś-Kujawska A., Sompolska-Rzechuła A., *Determinants* ..., op. cit., pp. 71–81.

basic production factors, or the level of broadly understood economic infrastructure. Therefore, the efficiency and effectiveness of a specific economic and political system in a given country has a positive or negative impact on the development possibilities of its individual markets, including the non-life insurance market (possibly in an ambiguous manner).

Over the years, many economists have noticed the important role of institutional and instrumental solutions in the functioning of a given country's economy. This issue was addressed in their works by, among others, Marks (2013), Keynes (2019), as well as other scientists such as North (2003), or Samarasinghe (2019)[13]. There are also many examples of such scientific investigations in Polish science. Research in this area was carried out, for example, by Niemiecki & Żukrowska (2004), Bossak (2006), Raftowicz-Filipkiewicz (2008), Misala (2011), or Przybyciński (2015)[14].

Analyzing systemic competitiveness requires a characterization and thorough examination of the economic system that is inextricably linked to it. It consists of many elements from the meta, macro, meso, micro and sometimes mega spheres. This topic was studied, among others, by Meyer-Stamer (1996), Cho (1998), Bossak (2006), and Misala (2011)[15]. The better these elements are matched to each other and are characterized by the greatest possible efficiency and effectiveness, the more efficient the economic development process of a given country is. Table 1 presents the levels of systemic competitiveness.

Table 1. The levels of systemic competitiveness

META LEVEL	Sociocultural factors Value system Basic political and economic structure Ability to formulate strategy and policy
MACRO LEVEL	Budget policy Monetary policy Fiscal policy Competitiveness policy Currency policy Trade policy

13. Marx K., *Capital*, Wordsworth Editions, England 2013; Keynes J. M., *Ogólna teoria zatrudnienia procentu i pieniądza*, PWN, Warszawa 2019; North D. C., *The role of institutions in economic development*, United Nations Economic Commissions for Europe, Discussion Paper Series, 2003 No. 2; Samarasinghe T., *The relationship between institutions and economic development*, "Munich Personal RePEc Archive Paper", 2019 No. 97755, pp. 1–17.

14. Niemiecki J., Żukrowska K., *Konkurencja a transformacja w Polsce. Wybrane aspekty polityki gospodarczej*, Instytut Gospodarki Światowej, Szkoła Główna Handlowa, Warszawa 2004; Bossak J. W., *Systemy gospodarcze a globalna konkurencja*, Instytut Gospodarki Światowej, Szkoła Główna Handlowa, Warszawa 2006; Raftowicz-Filipkiewicz M., Konkurencyjność systemowa gospodarki krajowej, „Acta Universitatis Wratislaviensis", 2008 Nr 16, pp. 113–121; Przybyciński T., *Ustrojowe uwarunkowania wzrostu i rozwoju gospodarczego w Polsce*, „Studia Ekonomiczne. Zeszyty Naukowe Uniwersytetu Ekonomicznego w Katowicach", 2015 Nr 213, pp. 102–112; Misala J., *Międzynarodowa konkurencyjność gospodarki narodowej*, Polskie Wydawnictwo Ekonomiczne, Warszawa 2011.

15. Meyer-Stamer J., *Konkurencyjność*…, op. cit., pp. 1–5; Cho D., *From National Competitiveness to Bloc and Global Competitiveness*, "Competitiveness Review", 1998, No. 8 (1), pp. 11–23; Bossak J. W., *Systemy gospodarcze a globalna konkurencja*, Instytut Gospodarki Światowej, Szkoła Główna Handlowa, Warszawa 2006; Misala J., *Międzynarodowa*…., op. cit., p. 121.

MESO LEVEL	Infrastructure policy Educational policy Technology policy Structural and industrial policy Environmental policy Regional policy Import and export policy
MICRO LEVEL	Management competences Corporate strategies Innovation management Optimal product cycle (development, production, marketing) Integration into technological networks Logistics of connections between companies Interaction between suppliers, producers and customers

Source: Own study based on: J. Meyer-Stamer, *Konkurencyjność systemowa,* „Gospodarka Narodowa", 1996 No. 3, p. 2

The authors and supporters of the concept of systemic competitiveness believe that it is impossible to select its individual determinants and create an individualized competitiveness policy. They justify this position by saying that in order to achieve competitiveness, there must be interaction between all its elements. The government and its economic policies are largely responsible for those interactions.

2. Research methodology

For each of the V4 countries, econometric models were constructed and examined, the aim of which was to explain the impact of systemic competitiveness factors on the development of their non-life insurance markets.

The dependent variable was a synthetic indicator of the development of the insurance market, developed using the zero-unitarization method, consisting of the value of gross premiums written, insurance market density, insurance market penetration and the number of insurance companies. The values of these diagnostic variables, presented in the form of stimulant and destimulant, were subjected to a normalization process, i.e. devaluing the variable titers and unifying the orders of magnitude in order to make them comparable. Then, synthetic values were determined using the selected aggregation formula.

The explanatory variables were the so-called economic freedom indexes developed by the Heritage Foundation (sub-indexes of the Index of Economic Freedom – IEF) and sub-indexes of the human development index (HDI).

Economic freedom indexes, as the name suggests, put the main emphasis on the freedom of a given economy. On this basis, they can be classified as factors describing systemic competitiveness, which is closely correlated with such freedom. Some aspects of economic freedom that are assessed under the IEF relate to a country's relationship with the rest of the world. An example may be the degree of openness of the economy to global investment or trade. In most cases, however, economic freedom indexes focus on the politics of a given country, assessing an individual's freedom to use work or financial resources without undue government interference

or restriction[16]. Selected sub-indexes were analyzed, which concern property rights, government integrity, tax burden, government spending, business freedom, labor market freedom, monetary freedom, trade freedom, investment freedom and financial freedom. Sub-indexes regarding judicial effectiveness and fiscal condition were omitted due to an insufficient time period (data available only from 2017 – new IEF methodology).

As for the HDI components, the life expectancy index, education index and income index were used. Human Development Index (HDI) is a synthetic measure used to determine the degree of socio-economic development of individual countries. It summarizes the average achievements of a given country's society in key dimensions of human development: long and healthy life, knowledge and a decent standard of living. This indicator is a kind of reflection of the effectiveness of the functioning of the systemic sphere of a given country. Countries with properly organized economic systems are also characterized by a high human development index[17].

Each of the constructed models was tested for the purpose of their possible practical use and thus increasing the probability of the validity of the conclusions formulated on their basis. Model verification was carried out, among others, by assessing the significance of structural parameters (Student's t-test and Snedecor's F-test), assessing the degree of model fit (estimation of the standard error of the residuals and the residual coefficient of variation), assessing the normality of the distribution of the residual component, assessing the homogeneity of the variance of the residual component (heteroscedasticity test), assessing linearity of the analytical form of the model and assessment of multicollinearity of explanatory variables. Appropriate statistical tools and the Gretl program were used for this purpose.

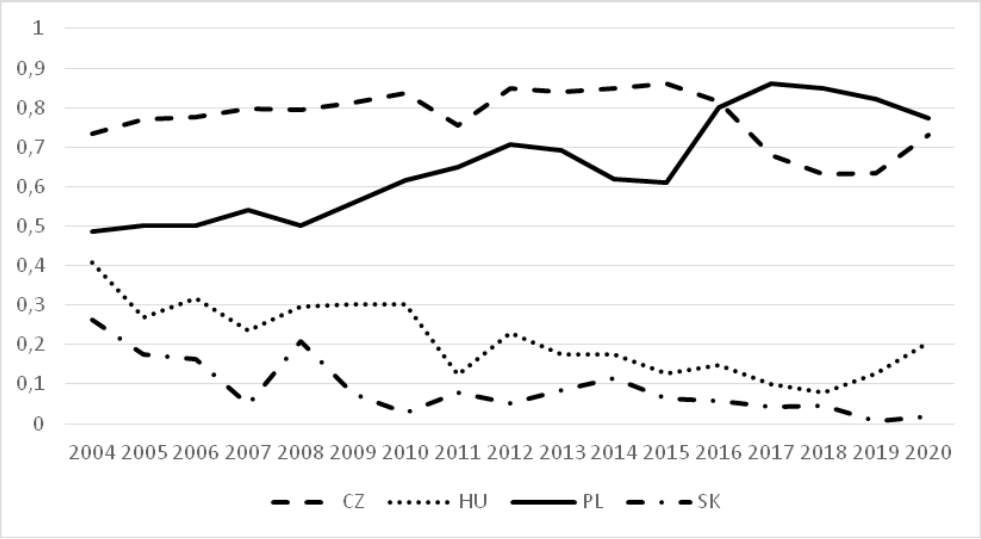
3. Research results

A synthetic indicator was constructed from the characteristics of 4 indicators of the development of the non-life insurance market of the Visegrad Group countries. Based on its value, it can be concluded that the Polish market at the end of the analyzed period was characterized by the highest level of development among the countries included in the analysis. However, for the vast majority of the period under study, the Czech Republic was the leader in this respect. Only since 2016 has the Polish market gained an advantage. However, a year after achieving the leadership position, there was a downward trend. The development of the discussed phenomenon is presented in Chart 1.

16. The Heritage Foundation, *2019 Index of Economic Freedom*, Washington 2019, p. 9.

17. Human Development Reports – www.hdr.undp.org/en (access 16.05.2023).

Chart 1. Values of synthetic indicators of the development of the non-life insurance market in V4 countries



Source: Own study

In 2020, the difference between both markets was insignificant. Moreover, taking into account the emerging trends, it can be assumed with a high degree of probability that the Czech Republic will return to first position again. The third market of the Visegrad Group is Hungary. Slovakia came in last place. This applies to the entire period under study.

The procedure of eliminating irrelevant variables as part of the analysis of the impact of selected systemic competitiveness factors on the development of non-life insurance markets of the Visegrad Group countries allowed the creation of models in which ultimately all explanatory variables – with the indicated two-sided critical area α = 0.05 – are statistically significant. These variables are presented in Table 2.

Table 2. Explanatory variables of econometric models of the impact of selected systemic competitiveness factors on the development of non-life insurance markets of the Visegrad Group countries

α = 0,05	Variable	Value *p*	Factor
Czech Republic	^Cze_Market_dev = 7,04 + 0,0158 Property_rights + 0,0118 Labor_free + 0,0130 Trade_free – 10,5 Life_expec		
	Property_rights	0,0010 ***	0,0158
	Labor_free	3,71e-05 ***	0,0118
	Trade_free	0,0011 ***	0,0130
	Life_expec	2,87e-06 ***	-10,5
Poland	^Pol_Market_dev = – 2,86 + 0,0170 Property_rights + 0,0208 Labor_free + 0,0158 Monetary_free		
	Property_rights	1,60e-06 ***	0,0170
	Labor_free	0,0166 **	0,0208
	Monetary_free	0,0034 ***	0,0158

Slovakia	^Slov_Market_dev = – 0,454 + 0,00728 Financ_free		
	Financ_free	9,35e-05 ***	0,00728
Hungary	^Hun_Market_dev = 3,34 – 3,69 Life_expec		
	Life_expec	2,93e-05 ***	– 3,69

** – statistical significance at the level 5%

*** – statistical significance at the level 1%

Source: Own study

Based on the constructed models, it can be seen that most systemic competitiveness factors influenced the development of the Czech non-life insurance market. Factors such as property rights, labor market freedom and trade freedom had a statistically significant stimulating effect in the years under study. The destimulant was the life expectancy index. The Polish market was also shaped, as in the case of the Czech Republic, by property rights and labor market freedom, as well as monetary freedom. All of the above have taken the form of stimulants. The Slovak and Hungarian markets were influenced by one factor each. In the case of Slovakia, it was a stimulant in the form of financial freedom, and in the case of Hungary, it was a destimulant, which was an indicator of life expectancy (the same destimulant as that used for the Czech market).

At the end of the period under study, the Czech Republic was assessed in terms of property rights under the IEF as a virtually free economy. Poland, however, was moderately free (the lowest rating among the V4 countries), but this factor still had a positive impact on the Polish non-life insurance market. The positive impact of this factor of systemic competitiveness on the development of the non-life insurance market in Poland and the Czech Republic may be conditioned by the fact that the main motivator of both employees and investors in a market economy is the opportunity to accumulate private property and become rich. One of the basic elements of the functioning of a market economy should be respect for private property rights and effective legal tools to protect them. It is crucial that citizens are aware that legal regulations protect their property. This builds security, stability and certainty of running a business. This stability contributes to saving income and creating long-term plans. As a result, property rights are one of the basic factors in the accumulation of investment or production capital. Another important phenomenon related to property rights and having a positive impact on the development of any market, including insurance, is the minimization of negative aspects related to the so-called "collective/common goods"[18]. The history of the "Eastern Bloc" countries has taught us that this is a phenomenon contributing to the degradation and exploitation of property held together. In fact, very often no one is responsible for such property. The situation is completely different with private property. Very important issues related to the protection of property rights also include the process of enforcing contracts. Undoubtedly, contractual obligations are the foundation of the market system. They concern primarily the private sector, but this aspect is equally important in relations with the state apparatus. Government enforcement of private contracts ensures justice and fairness in the market, which contributes to economic development, which in turn stimulates the development of the insurance market.

As for the freedom of the labor market, from the perspective of economic freedom it is advisable for enterprises to have the ability to freely hire and fire employees. The Czech Republic was rated

18. Goods that benefit every individual belonging to some group, and where it is hard to exclude any individual from that benefit.

the best in this respect compared to other V4 countries. For most of the period under study, they were classified as almost fully free economies in this case (in 2013–2015, they were fully free). Poland was classified in third place, after Hungary, as a moderately free economy, but also in this case this determinant of systemic competitiveness turned out to have a positive impact on the Polish non-life insurance market. Using the freedom to manage human capital in a rational manner has a positive impact on the efficiency of enterprises and, consequently, maintaining overall economic growth. The functioning of the free market should be based on the principle of voluntary exchange. It applies to both the goods market and the labor market. Problems resulting from state intervention in the labor market are of the same nature as in any other market. Government regulations addressing the labor market can take many forms. Such regulations may include minimum wages, limits on hours worked, requirements regarding workplace conditions, and restrictions on hiring and firing employees. Depending on their nature and the way they are enforced, they can be a driving force for greater freedom or an obstacle to the smooth functioning of labor markets. Burdensome labor law regulations have a negative impact not only on companies, but also affect employees. An example may be rigid labor regulations that prevent employers and employees from freely negotiating changes to employment conditions. The result of such circumstances is, for example, a mismatch of supply and demand for labor, which may translate into production volumes and changes in general supply and demand.

In terms of trade freedom, all V4 countries were rated the same – as fully free economies. However, in the case of the Czech Republic, this factor had a positive impact on the non-life insurance market. We can define commercial freedom as the freedom of interaction between citizens who are buyers or sellers. These interactions are often subject to restrictions. They manifest themselves, among other things, in the form of import and export fees and taxes, and direct trade bans. A number of restrictions may also occur in the economy in a more indirect and, let's call it, "subtle" way. As an example, regulatory barriers related to health or safety can be given. Such a situation occurred during the Covid-19 pandemic, which led to the weakening of national economies, which, consequently, impacted the development of the insurance market. The degree and extent to which a government restricts or even impedes its citizens' free flow of foreign trade directly affects their ability to achieve their economic goals and maximize both productivity and generated prosperity. An example of such a restriction is trade tariffs that directly contribute to higher prices of imported goods. Therefore, the cost of import is actually borne by consumers, not importers. Restrictions on foreign trade may also distort the decisions of local producers. These activities hamper overall economic efficiency and growth.

The life expectancy rate had a negative impact on the non-life insurance market in both the Czech Republic and Hungary[19]. In research on the broadly understood development of insurance, its impact is most often described as ambiguous, but in the case of these two countries it was a destimulant. Just as in the case of life insurance, life expectancy should have a positive correlation with the development of this market (although this is not always the case), in non-life insurance this relationship may be negative, because as we age we may pay less attention to insuring our assets, we care more about our health, and we invest our income or savings in this direction.

19. By increasing α from 0.05 to 0.1 and avoiding the elimination of statistically insignificant variables, the negative impact of the life expectancy index on the development of the non-life insurance market also occurred in the case of Poland and Slovakia.

Monetary freedom was a factor stimulating the Polish non-life insurance market. In this case Poland was rated the best among the V4 countries in the analyzed period. It was classified as a fully free economy. It should be mentioned that this category is primarily determined by a stable currency. Economically free people, whether they are entrepreneurs or consumers, need a stable and reliable currency as a medium of exchange. They need an effective unit of account. Without monetary freedom, it is difficult to create long-term value or raise capital. The value of a country's currency can be regulated to a large extent by its government's monetary policy. Monetary policy, by fighting inflation, maintaining price stability and actions aimed at preserving national wealth, allows society to rely on market prices, which, thanks to such a policy, can be estimated in the future. Then you can make investments, savings and other long-term plans with greater confidence. Currently, it would be difficult to identify one appropriate monetary policy that will support economic freedom. The gold standard once enjoyed wide support. Currently, one of the most important elements characterizing almost all monetary theories is maintaining a low level of inflation and an "independent" central bank. There is also a belief that price controls disrupt market efficiency and lead to shortages or surpluses.

Financial freedom is interpreted and assessed within the IEF as a well-functioning financial system ensuring the availability of diverse services. These include, among others things: savings, credit, insurance, payment and investment services for both individuals and businesses. These elements had a positive impact on the non-life insurance market in the case of Slovakia. At the beginning of the analyzed period, it was the leader in this classification, together with the Czech Republic, and later, for most of the analyzed period, it assumed the same values as the economies of Poland and Hungary. The positive impact of this factor on the Slovak market may be due to the fact that, for example, by increasing financing opportunities and promoting entrepreneurship, the open banking environment strives to ensure the most effective financial intermediation between households and companies, as well as investors and entrepreneurs. A properly functioning financial system allows entities making bad decisions to learn about it quickly. This happens because the market, within the financial system regulated and driven by demand and supply, provides information to these entities in real time. This information mainly concerns prices. The effectiveness of the flow of such information depends on market transparency and the integrity of the data provided. Through disclosure requirements and independent auditing, an effective regulatory system ensures both transparency and integrity. In the case of Slovakia, these elements may have a statistically significant positive impact on its non-life insurance market.

The constructed models were verified for the purpose of their possible practical use and thus increasing the probability of the correctness of the conclusions drawn on their basis. The results of the tests performed are presented in Table 3.

Table 3. Verification of econometric models of the impact of selected systemic competitiveness factors on the development of non-life insurance markets in the Visegrad Group countries

$\alpha = 0{,}05$	Czech Republic	Poland	Slovakia	Hungary
Assessment of the significance of structural parameters				
Student's t-test	All variables are statistically significant	All variables are statistically significant	All variables are statistically significant	All variables are statistically significant
F-Snedecor test	$p = 3{,}3e\text{-}05 < \alpha$	$p = 4{,}05e\text{-}07 < \alpha$	$p = 9{,}3e\text{-}05 < \alpha$	$p = 2{,}9e\text{-}05 < \alpha$

Assessment of the degree of model fit				
Residual coefficient of variation	$Ve = 0,04 < 10\%$	$Ve = 0,07 < 10\%$	$Ve = 0,49 > 10\%$	$Ve = 0,24 > 10\%$
R-squared coefficient of determination	$R^2 = 0,87$	$R^2 = 0,91$	$R^2 = 0,65$	$R^2 = 0,70$
Assessment of the normality of the residual component distribution				
Doornik-Hansen's test	$p = 0,11714 > \alpha$	$p = 0,37410 > \alpha$	$p = 0,89593 > \alpha$	$p = 0,78881 > \alpha$
Assessment of homogeneity of variance of the residual component. Heteroscedasticity test				
White's test	$p = 0,345014 > \alpha$	$p = 0,176799 > \alpha$	$p = 0,002113 < \alpha$	$p = 0,773797 > \alpha$
White's test (squares only)	$p = 0,459281 > \alpha$	$p = 0,057944 > \alpha$	–	–
Breusch-Pagan test	$p = 0,848065 > \alpha$	$p = 0,534210 > \alpha$	$p = 0,163866 > \alpha$	$p = 0,768658 > \alpha$
Koenker's test	$p = 0,218352 > \alpha$	$p = 0,553413 > \alpha$	$p = 0,099651 > \alpha$	$p = 0,743879 > \alpha$
Evaluation of the linearity of the analytical form of the model				
Nonlinearity test – squares	$p = 0,322847 > \alpha$	$p = 0,465318 > \alpha$	$p = 0,990199 > \alpha$	$p = 0,280465 > \alpha$
Non-linearity test – logarithms	$p = 0,328219 > \alpha$	$p = 0,477692 > \alpha$	$p = 0,990199 > \alpha$	$p = 0,283103 > \alpha$
Ramsey's RESET specification test	$p = 0,207 > \alpha$	$p = 0,477 > \alpha$	$p = 1 > \alpha$	$p = 0,573 > \alpha$
VIF variance inflation factor	$1 < VIF < 10$	$1 < VIF < 10$	One variable – no need to calculate VIF	One variable – no need to calculate VIF

Source: Own study

All constructed models have significant estimates of structural parameters – both jointly and individually. Their degree of fit to real data, measured by the coefficient of determination, is high. The highest in the case of Poland, the lowest in the case of Slovakia. Additionally, the distribution of the residuals of each model is normal, and the residual variance is kept constant. It should also be noted that the specification and the form of the models themselves are indicated as correct by all tests. There is no collinearity of variables in any of the models. It should be mentioned that two models (Slovakia and Hungary) have one explanatory variable each. The only drawback is the too high value of the residual variability coefficient in the model of the development of the insurance market in Slovakia and Hungary. All other tests used in all models confirm that the developed models are of high quality and suitable for practical use. Therefore, it can be concluded that the conclusions drawn on their basis are most likely correct.

Conclusion

Many studies have shown that individual factors shaping the insurance market may influence its development in both positive, negative and ambiguous ways. Such a multiplicity and diversity of determinants may generate difficulties in identifying the factors that have a leading influence on the development of this phenomenon. It is also not an easy task to select or create appropriate indicators that will be able to reflect the changes taking place on the insurance market as closely as possible. However, it should be noted that in practice, all determinants of the development of the insurance market ultimately occur primarily in the form of an increasing number of insurance

products, their growing availability, and an increase in the value of insurance premiums. Therefore, the process of measuring insurance development is based mainly on three measures: the value of gross premiums written, the insurance density index and the insurance penetration index. The second and third indicators, taking into account the ratio to GDP and population size, are still based on the value of premiums, therefore it can be concluded that these measures, due to their main component, are also unable to comprehensively reflect changes taking place on the insurance market. Therefore, it was decided to create synthetic indicators of the development of non-life insurance markets in the Visegrad Group countries, which, in addition to the above-mentioned indicators, also included the number of enterprises.

Based on the constructed indicators, it was shown that the Polish market was the leader in the development of the non-life insurance market (as of 2020) and throughout the entire period under study (2004–2020) it was the only one characterized by a growing trend. It also had the highest growth dynamics (both y/y and throughout the period under study). It resulted in the largest increases or the smallest decreases in the components of the constructed indicator. The only exception were insurance companies, the number of which was growing more intensively on the Slovak market. However, it cannot be ignored that the Czech market was the leader for the vast majority of the period under review. The Czech Republic also held a leading position in terms of systemic competitiveness. The Czech market was also shaped in a statistically significant way by the largest number of factors, which proves its development and complexity. Since 2014, Poland was in second place in terms of systemic competitiveness. The next places are taken by Slovakia and Hungary, whose systemic competitiveness was at a very similar level (sometimes even the same). Therefore, a certain correlation can be noticed here with the development of insurance markets in individual countries. Poland, despite having a lower level of systemic competitiveness than the Czech Republic, benefits from the size of its population and thus the market's absorptive capacity.

Despite the upward trend, both in the case of the value of the synthetic indicator of the development of the Polish non-life insurance market and systemic competitiveness, it is advisable to introduce further improvements to the national economic system. This can be done by improving elements that already have a positive, statistically significant impact on the Polish market (factors such as property rights, labor market freedom and monetary freedom) and making efforts to ensure that they also have a positive and statistically significant impact on the non-life insurance market other factors of systemic competitiveness. The efficiency of the economic system (systemic competitiveness) also affects economic, demographic, social, cultural and structural factors, which in the literature on the subject are considered the most important determinants of insurance development.

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Wpływ konkurencyjności systemowej gospodarek krajów Grupy Wyszehradzkiej na rozwój ich rynków ubezpieczeń non-life w latach 2004–2020

Celem artykułu jest ocena wpływu wybranych czynników konkurencyjności systemowej gospodarek państw Grupy Wyszehradzkiej na rozwój ich rynków ubezpieczeń non-life w latach 2004–2020. W opracowaniu dokonano analizy literatury przedmiotu, jak również wykorzystano metody statystyki opisowej oraz analizy ekonometrycznej, na potrzeby której skonstruowano syntetyczne wskaźniki rozwoju rynków ubezpieczeń non-life analizowanych krajów.

Na podstawie przeprowadzonych badań stwierdzono, iż pozycja Polski w ramach Grupy Wyszehradzkiej, pod względem rozwoju rynku ubezpieczeń non-life, jest wiodąca, pomimo iż to Czechy charakteryzują się najwyższym poziomem konkurencyjności systemowej. Ponadto między rynkami obu państw występują podobieństwa. Kształtowały je bowiem w sposób pozytywny, istotny statystycznie takie same składowe konkurencyjności systemowej (prawa własności i wolność rynku pracy). Na kolejnych miejscach uplasował się rynek węgierski i słowacki.

Słowa kluczowe: rynek ubezpieczeń non-life, konkurencyjność systemowa, modelowanie ekonometryczne, Grupa Wyszehradzka

DR INŻ. KONRAD ROJEK – Katedra Finansów, Ubezpieczeń i Rachunkowości, Wydział Ekonomii i Finansów, Uniwersytet Radomski im. Kazimierza Pułaskiego.
e-mail: k.rojek@uthrad.pl
ORCID: 0000-0002-4846-8943