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The Use of the Principle of Sharing and Mutuality in Covering Risks (in the Modern World)

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ABSTRACT

Purpose:
Operational risks appear as the main threats of the modern world. Mistakes made by employees, an imperfect information systems or changes in the law can cause losses that businesses today are not even able to estimate. Therefore, in the face of widespread the asymmetry of information, it becomes crucial to find such forms of financing losses, where the transmission of this information will not cause any concern. Such a form of insurance is based on the principle of mutuality.

Design/methodology/approach:
The research was based on a review of the literature in the area of asymmetric information and verification of research in the identification of key risk categories.

Findings:
Many researchers, including Nobel Prize winners, have identified the problem associated with a lack or asymmetry of information. But today, this issue leads to critical risks for businesses. This phenomenon is a subject of disclosure in the form of various categories of operational risk.

Research limitations/implications: Mutuality-based insurance is therefore a path based on solutions of the past (primary forms of insurance), but at the same time is seen as a response to the lack of adaptation of insurance products to the actual needs of clients. Consequently, the agency theory (principal-agent dependency) commonly used in modern times is being replaced by the idea of a sharing economy.

Originality/value:
The study addresses a complex area of the modern economy. Companies run their business and they want to have adequate insurance products to cover possible losses, including operational risks. Today, the insurance market is not ready to build appropriate products. Only insurance based on mutuality and the realization of the sharing economy can allow the preparation of adequate insurance products.

1. Introduction

The key elements of the modern world economy and individual enterprises are, on the one hand, systemic risks (pandemic, war) and, on the other hand, events related to the organisation and resulting in its characteristics, it means operational risks (mistakes of employees, improper procedures). In many cases, operational risks appear to be as difficult to mitigate and as important to a company's operations as systemic risks. The aim of this article is to show that the easiest and most effective (and perhaps the cheapest) forms of covering losses caused by such operational risk are solutions based on the sharing economy and mutual insurance.

On these days, almost 30% of the insurance premium goes to insurance companies based on the idea of mutuality. The remaining part of the insurance premium is collected by organizations (insurance companies) which base their activity on commercial principles. Analytical work on the effectiveness of the application of these solutions was carried out by comparing the financial results of profit-oriented insurance companies and those based on the principle

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of mutuality (territorial scope of the analysis: Europe). A special place in the analytical dimension is also occupied by information on the results of entities based on pure mutuality and operating in the area of agriculture (mutual fund).

The category 'systemic risk' was introduced by the Organisation for Economic Co-operation and Development (OECD). As noticed Systemic risk refers to "the risk or probability of a collapse of an entire system, as opposed to individual parts or components, and arises from the dependence (correlation) between most or all of these parts" (Kaufman& Scott, 2003). An appropriate categorization of these events are situations that (Renn, 2016): (1) are by global nature in their potential effects, (2) have complex and closely related to causes resulted in a high degree of comprehensive nature, (3) are non-linear in their cause-effect relationships, and (4) have stochastic regularity with respect to their effects.

Operational risk - is the risk of errors occurring in transactions carried out, the risk of losses resulting from inadequate or unreliable internal processes, people and technical systems or from external events. The probability of occurrence ranges from small losses that occur daily, for example due to errors in routine processes that result in business interruption (Moosa, 2007). But it can fail with IT systems or a damage to infrastructure or unauthorized or fraudulent acts by employees or external parties. All these cases can affect any type of organisation and any area of the economy.

When we analyze standard terms and conditions of property insurance or liability insurance contracts, we find exclusions referring to such phenomena. An exemplary catalogue of exclusions includes war, terrorism, nuclear contamination and damages resulting from erroneous advertising or data loss.

2. Review of Literature

2.1 Theoretical Review

A lack of effective insurance products offered to cover the consequences of these events is due to information asymmetry, i.e., mainly to insufficient information on the part of insurance companies. Information asymmetry occurs to the both sides of the implementation of the contract: before the conclusion of the transaction - including insurance - (*ex-ante* phase) and after it (*ex post* phase) (Figure 1). In the *ex-ante* phase, the problem of adverse selection is directly related to asymmetry, while in the *ex-post* phase, is directly related tothe moral hazard (Stiglitz&Weiss, 1981).

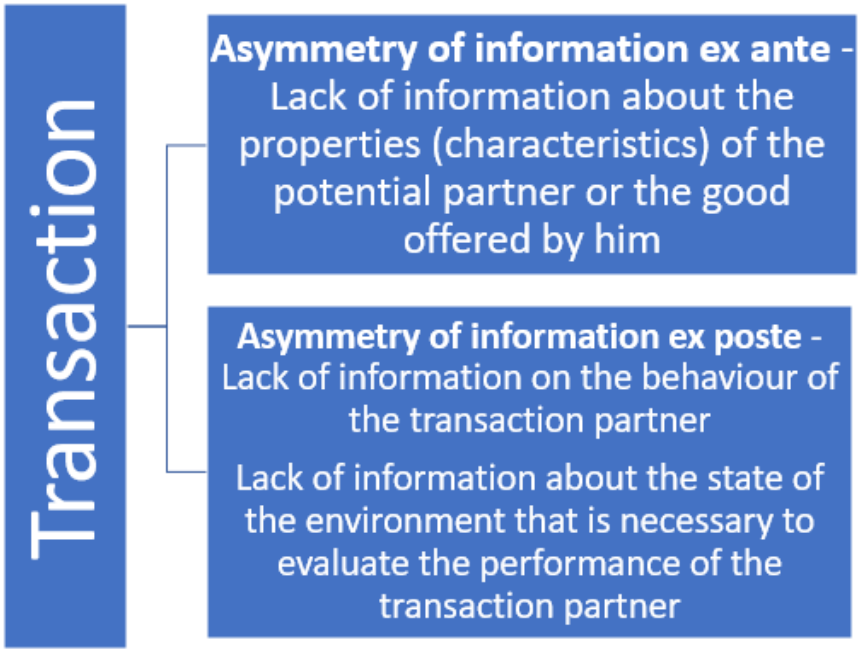

Figure 1. Phases of information asymmetry
Source: own work

Threats of information asymmetry further contribute to uncertainty, noted as “neither ignorance nor complete and perfect information but partial knowledge” (Knight, 1935, p. 199). We can identify a significant level of information asymmetry in the area of corporate operational risk, which in turn causes difficulties in finding appropriate insurance cover (which could be an instrument for risk mitigation).

In relation to the phenomena described above, a lack of insurance protection may result, in terms of systemic risk, primarily from the need to bear full responsibility for the financial consequences relating to many entities. Insurance companies are ready to cover the consequences of the systemic risk, but by building solutions with limited liability: using maximum liability limits, introducing index-based insurance and lump-sum liability, or by implementing the so-called microinsurance (Doff, 2015, p. 49).

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Based on the definition of operational risk, we can divide this risk into two main types (Figure 2). Type one corresponds to the risk of a loss due to the firm's operating system, i.e., a failure in a transaction or investment, either due to an error in the back office (or production) process or due to legal considerations. Type two corresponds to the risk of a loss due to incentives, including both fraud and mismanagement (Jarrow, 2008). Both types of operational risk losses occur with repeated regularity, and they can be small and safe or huge and catastrophic.

Figure 2. The scope of operational risk
Source: own work

With respect to operational risks, the lack of insurance coverage is primarily due to the behavior of the employees of the insured entity and the management of such entity itself. The choice of these two operational risks is due to the great difficulty in obtaining a source of loss funding through an adequate insurance contract. The lack of attention to specific procedures regarding the functioning of an enterprise (e.g. protection against fraud or errors in access to computer systems) means that it is not possible to correctly quote an insurance premium and determine appropriate behavior in the event of a loss. Therefore, insurance contracts also introduce limits of liability and enforce appropriate behavior after a loss that has been realized.

The objective pursued by a commercial organization is to maximize the value of the company and this can be achieved by increasing product prices, maximizing returns on investment activity, reducing costs, restructuring employment, etc. Such activities can drive the growth of the enterprise but can also be in conflict with the interests of clients. The problem of business development is today closely linked to technological progress, new devices, with its startling in the different areas of activity. However, these new devices, technology are closely associated with a man and his/her autonomy, desire to reduce efforts or costs. So, a technology, and as a result operational activities, are designed to bring benefits to a specific recipient. Yet, if these benefits an objective on their own, they can lead to the implementation of operational risks. Therefore, in the field of economics, it becomes important to explore a combination of the interests of the owner and the client, thus eliminating the existence of opposing pressure groups. Such examples can also be found in the area of insurance (Trynchuk et al., 2019).

2.2 Previous studies

Nevertheless, the operational risk nature features are becoming increasingly important among the most frequently indicated risks to enterprises. In a recurring survey conducted worldwide by Aon PLC, among the 10 most frequently indicated risks in 2021, as many as six can be categorized as operational risks (Figure 3). Amongst these can be identified: cyber-attacks/data breach, commodity price risk/scarcity of materials, damage to reputation/brand, regulatory/legislative changes, supply chain or distribution failure, failure to innovate/meet client needs. It is therefore worth considering the characteristics of operational risks and to what extent insurance covers the consequences of such events.

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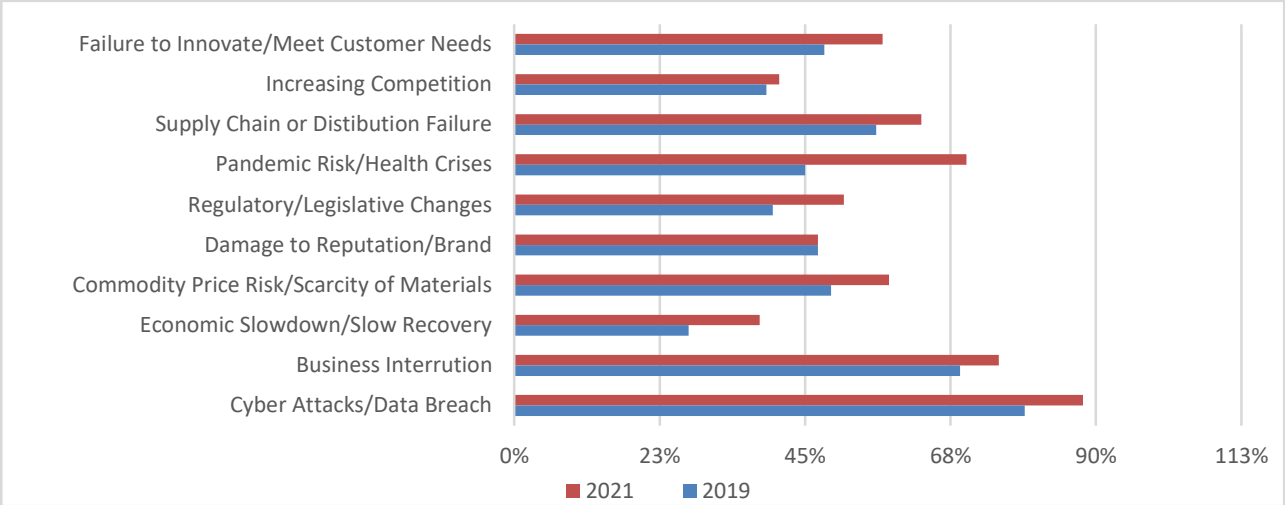

Figure 3. Reported Readiness for Top 10 Risks
Source: AON (2021), Global Risk Management Survey 2021

As indicated by the Aon PLC (2021) study, the greatest level of risk is experienced from Cyber Attacks/Data Breach since 2019. This area of risk was ranked as the 25th greatest risk to the modern world in a similar study conducted in 2009, but in 2017 it was ranked the 5th and now as the first one. It shows how operational risks dominate the risks. At the same time, the referenced study details that different perceptions of individual threats exist in the different parts of the world. Cyber Attacks/Data Breach is ranked 9th in Latin America and 4th in Europe. However, it already ranked 2nd in Asia Pacific and Middle East and Africa and 1st in North America.
Some of the most spectacular events in terms of operational risk in the financial sector are summarized below.

- Barings Bank (1995) went into insolvency due to the fraud of its dealer Nick Leeson and lack of separation of functions and supervision, loss amount US$1 billion (Stein, 2000)
- Daiwa Bank (1995) in the US with a loss of USD 1.1 billion (Aronson, 2003)
- Bank of America failed system integration USD 225 million (Farrell, 2010)
- Salomon Brothers IT systems conversion resulted in incorrect account balances of USD 303 million (Sims &Brinkman, 2002)
- a scandal in New York involving illegal business practices by insurance broker Marsh that rigged prices by submitting false bids to create the illusion of competition, charging multi-million-dollar fees for referring clients to selected firms (Cummins& Doherty, 2006)

3. Methodology

In order to build the necessary coverage for operational risk, it is necessary to define insurance product designs that simultaneously cover the consequences of operational and systemic risk for those at risk and ensure the security and sustainability of operations for the insurance company. Due to this effect, the authors have turned to the traditional approach to insurance, i.e. they have analyzed possible sources of funding and identified the optimal use of mutual insurance.

3.1 Insurance Mutuality - description of the variables under study

Vaughan, in defining a mutual insurer, specifies that it is owned by the policyholder (as opposed to a joint stock company) (Vaughan& Vaughan, 2008, p. 77). Studies for the World Bank define mutual insurers as those in which clients own the organisation and the financial benefits of mutual insurance arise from lower premiums (Kassim, 2012, pp. 21-22). While developing this understanding - a mutual insurer is an undertaking in which:
1) the members are both the insurer and the policyholders,
2) the members, either through contributions or liabilities, participate in the creation of a fund from which all damages are paid and liabilities covered,
3) profits are shared among the members and losses are covered by them in proportion to their participation in the fund [1] (Conflict, 1942, pp. 689-693).
In this respect, we can identify the benefits of mutual insurance on the basis of agency theory [2].

[1]Such a principle is called pay-as-you-go, participatory or non-final premium - the actual amount of the premium is only determined after the outcome of the insurer has been determined.
[2]The first attempts to explain the coexistence of commercial and mutual insurance on the basis of agency theory were made by Mayers and Smith (1981,1986) and Fama and Jensen (1983). This theory of the functioning of the firm is categorised as one of the strands of contemporary enterprise theory known as new institutional economics. (See more (Williamson, 1963, pp. 1033-1037))

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The agency theory was first presented by M.C. Jensen and W.H. Meckling in 1976. (Eisenhardt, 1989, p. 58). The key concept of agency theory is the agency relationship. It is defined as a contract whereby, one or more persons (the principal) use the services of another person (the agent) to perform some action, to fulfil a task. This action involves the delegation of authority and thus a certain degree of decision-making autonomy to the agent. (Jensen & Meckling, 1976).

An important aspect of this theory is the occurrence of so-called agency costs which are the costs associated with the reduction and resolution of conflicts that occur between interest groups plus the value of the service (production) capacity lost as a result of the inability to eliminate these conflicts from the activities of organization (Birkmaier & Laster, 1999).[3]

As a part of this strand, a theory of organizational forms has been proposed according to which, in a market process, the organizational form that guarantees the minimization of costs, including agency costs, will prevail (Fama & Jensen, 1983). It is a theory that has formed the basis for considering the coexistence of insurance companies based on the principle of mutuality and commercial companies. In insurance companies, the relevant agency relationships may involve three groups of stockholders - owners, managers, policyholders (Janowicz-Lomott, 2016) (Figure 4).

	Managers	**Owners**	**Clients**
commercial insurer	management	shareholders	policyholders
mutual insurer	management	member = policyholder	

Figure 4. Links between owner, client and manager in different forms of insurance activity
Source: Mayers& Smith(2000)

In the diagram presented above, two agency relationships (contracts) can be found: owner-management, owner-client relevant to explaining the strengths and weaknesses of both organizational forms of insurance companies.

The first type of relationship 'owner(principal) - management (agent)' is the primary agency relationship for the theory. It is believed that the resolution of conflicts of interest along this line is easier in the commercial companies. An important mechanism for external supervision is the capital market verifying the performance of managers, but also a properly structured system of information and financial incentives (Janowicz-Lomott,2016).

The second type generating agency costs occurs on the 'owner-client' line. In a mutual company, the combined interest of owner and client eliminates the existence of opposing pressure groups. In this respect, therefore, insurance mutuality is a response to the existing pressures identified in the previous section. This idea can be directly applied to build appropriate insurance solutions covering operational risks.

3.2 Insurance Mutuality and Information Asymmetry - enlargement of the study area

A natural solution to the problem of information asymmetry, not only in insurance, is to invest resources in monitoring activities and using the information obtained in this way. A full observation of policyholders and activities undertaken by them is either impossible or costly, and in the case of operational risk, this involves overcoming the reluctance to fully invigilate the company, including a disclosure of strategic information. Other solutions are therefore being sought, including an analysis of the benefits of specific organizational forms of insurance companies.
Mutual insurance, as described in the previous section, in theory shows an advantage over commercial insurances in terms of addressing information asymmetries, and both *ex-ante* (called adverse selection) and *ex-post* (moral hazard) asymmetries.

Smith and Stutzer (1990, pp. 493-510) formulated a theory of the coexistence of different organizational structures in the insurance markets as an effect of the existence of adverse selection in that market. They based their concept on an analysis of two types of insurance contracts - one characteristic for insurance companies based on the idea of mutuality (premium settled after the insurance period) and the other for commercial companies (fixed premium,

[3]One of the earliest descriptions of the impact of the separation of ownership and management (hence the thesis of agency costs) is contained in "An Inquiry into The Nature and Causes of The Wealth of Nation" by Adam Smith: *"The directors of such companies, however, being the managers rather of other people's money than of their own, it cannot well be expected, that they should watch over it with the same anxious vigilance with which the partners in a private copartnery frequently watch over their own. Like the stewards of a rich man, they are apt to consider attention to small matters as not for their master's honour, and very easily give themselves a dispensation from having it. Negligence and profusion, therefore, must always prevail, more or less, in the management of the affairs of such a company"* (Smith, 1904).

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determined before the conclusion of the contract) [4]. In their considerations, Smith and Stutzer conclude that a mutual insurance company will be chosen by lower-risk policyholders in terms of a single business line (type of insurance).The mutual insurer should be linked to a lower-risk policyholder (an entity with lower expected losses) (Smith & Stutzer, 1990, pp. 508-509).

The above theoretical considerations are also confirmed by analytical studies conducted by many authors (O'Donnell, 1936, p. 663;Bainbridge, 1952, p. 190 ff.);Smith& Stutzer, 1990, pp. 507-508; (Lamm-Tennant & Starks, 1993, pp. 29-32;Mayers& Smith, 2002, pp. 117-124). Policyholders, knowing their risk, 'signal' their lower-than-average risk, as it were, by choosing insurers based on the principle of mutuality. Most often, this is related with the fact that the risk of the insurance activity in commercial insurance is shared between policyholders and shareholders (responding in the case of a badly inadequate insurance fund), while in the case of mutual insurance it is actually only between policyholders, so when the risk of policyholder is higher, the latter will choose the commercial company. This situation is even referred to as the free-rider problem[5] or even the seizure of shareholders' capital (Laux & Muermann, 2010, pp. 333-354). The selection of 'better' risks and their supervision in mutual insurance is even called 'risk depreciation' (Xi et all, 2021).

The problem of ex-post asymmetry, i.e. moral hazard, is also one of the key issues raised in connection with the issue of mutual insurance. In the literature, the effect of mutuality on limiting moral hazard is even pointed out as one of the immanent features of insurance mutuality (Sangowski, 2001;Rejda, 1998;Vaughan& Vaughan, 2008). In 1995, B. D. Smith and M. J. Stutzer attempted to theoretically prove the beneficial effect of mutual insurance on reducing moral hazard. For the purpose of doing so, they based a model of gambling on the assumption that the probability of loss can be reduced at the expense of the effort (workload) involved in reducing gambling. In doing so, they demonstrated that a participation contract (associated with a non-final premium) is the optimal method for encouraging policyholders to make efforts to reduce moral hazard losses, as it ties policyholders to the ultimate outcome of the insurer (Smith, Stutzer, 1995).

Certainly, in formal terms, the analyses conducted by Smith and Stutzer (1990,1995) concerned the effect of participation contracts on the ability to reduce the impact of adverse selection and moral hazard. However, since these contracts have been commonly used by insurers basing their operations on the idea of mutuality they have therefore been adopted as a conceptual explanation for the coexistence of both organizational forms in the insurance markets (Lamm-Tennant& Starks, 1993, pp. 29-46;Ligon& Thistle, 2005, pp. 529-556;MacMinn&Ren, 2011, pp. 101-111). They also provide theoretical evidence to support the words that 'moral hazard and adverse selection can have interesting consequences for the choice of ownership structure' (Winton, 1993, p. 509).

The theoretical concepts analyzed for the advantage of mutual over commercial insurance under conditions of information asymmetry are part of the considerations on the design of insurance cover for operational risk. Mutuality-based mechanisms linked to other management instruments of operational risk can become a solution to the lack of adequate insurance cover for entrepreneurs.

4. Mutuality in the insurance market and the concept for covering operational risk

Practice shows that mutual insurances can fulfill the role of a traditional insurer[6] but also, thanks to the development of new technologies, they can become a tool for creating informal communities securing the interests of entrepreneurs, in both cases: developing and developed countries.

Mutual insurers in Europe account for about one third of the global mutual insurance market. In 2020, they collected about 33% of the global insurance premium in Europe, in life insurance 25.7% and in non-life insurance 42.8%. In 2015 and 2016, for the first time since 2008 (ICMIF, 2022), there was an admittedly slight decline in the premium collected by mutual insurers (Figure 5).

[4]Participation contracts, as mentioned earlier, are not the only determinant of a particular organizational structure. Participation policies may also be offered by commercial insurance companies, but the scale of this activity is not as widespread as in the case of mutual insurers.

[5]The free-rider problem refers to a phenomenon that has been known for a long time. The free-rider issue refers to the efficiency of resource allocation in goods markets characterized by very high costs of excluding someone from their consumption. This allows economists to define a free-rider as one who uses goods or services to an extent that exceeds a share of the latter related to the cost of producing them. This problem generally referred to public goods. See more (Galor, 2010, pp. 63-78).

[6]can be mentioned, inter alia, mutual insurance associations or cooperative insurers, but also other forms permitted by the law. See more (Janowicz-Lomott & Sliwinski, 2017).

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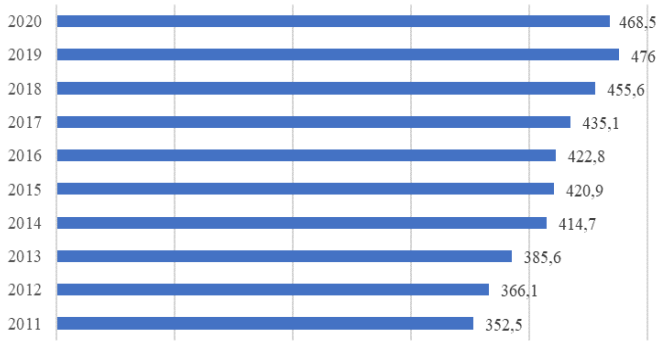

Figure 5. Mutual and cooperative premium income in Europe (EUR billions).
Source: Own elaboration based on International Cooperative and Mutual Insurance Federation reports

The growth of premium in the overall insurance market in Europe between 2010 and 2020 was approx. 14% when, at that time, the dynamics of mutual insurance was close to 32%.

Both the theoretical considerations in the literature and the widespread presence of mutual insurance companies on the insurance market allow us to draw conclusions about a possible new role of insurance mutuality. It will involve offering insurance cover when it is today inadequate to the needs of the client. However, a problem that has been signaled for some time by those who study social enterprises (which include mutual insurance associations) is a kind of informal commercialization of social enterprises, which in practice modify their mission and 'tilt' towards a market enterprise (Płonka, 2013). Due to the fact that these enterprises, having been economically successful, decide to further market expansion and emphasize the economic aspect at the expense of social functions. This thesis is also supported by the results of studies conducted in Poland, which indicate that the place occupied by mutual insurance associations in the field of social economy, is more similar to the field occupied by the business sector with a high degree of socialization (e.g. pursuing the corporate social responsibility model) than the social economy sector (Płonka, 2013). This phenomenon is extremely characteristic of large mutuals, especially the universal mutual insurance associations where, due to the number and variety of entities involved, social ties disappear.

The solution to this problem could be the sharing economy which is understood as the sharing of assets, resources, time, skills or capital, without transferring ownership. However, it is equally enabling services based on shared resources. In the case of operational risk and search for sources of loss coverage, it is the search for economic mechanisms that will allow the resources of all entities involved in building a community of danger, i.e. a group of entities facing the same risk that define an event as a risk.

The entities that decide to join the sharing economy often reject available, perhaps even cost-optimal solutions, in favour of what they believe to be higher values. This might be sustainability, popular in the recent years, or corporate social responsibility. However, in the case of operational risk management, it is the search for a solution that does not breach trade secret, while at the same time creating a sustainable source of funding for the consequences of events. The objective, therefore, is to move away from the need to fill out very elaborate and insightful insurance applications in favour of trust between the participants in such an undertaking.

In the case of insurance mutuality, it is worth highlighting the historically well-established, but still present today, informal insurance groups. They are formed and function mainly through direct acquaintance between policyholders. Such groups exist everywhere but are particularly popular in developing countries (mainly rural areas) where credit or insurance markets are underdeveloped. The body of literature often points to their development as a part of stabilizing operations of homestead, but also as health, accident, funeral benefit equivalents or short-term unemployment assistance in Asia, Africa, Central America or the Middle East.[7]

Modern technologies (mainly the internet) and social media are fostering the creation of groups of friends, which can be called co-insurance pools (so-called peer-to-peer, P2P insurance). There is a dynamic development of online platforms (start-ups for P2P insurance) financed as a rule by private individuals or venture capitals (Swiss Re, 2016). Formally, they are not insurance companies, but a specialized form of intermediation - they enable the organisation of many small groups whose members offer each other insurance cover (e.g., Friendsurance in Germany, Guevara and Inspool in the UK, in Peere in France, Lemonade and Insure APeer in the USA, Broodfond in the Netherlands, Peers Mutual Protection and Tong Ju Bao in China, Wesura in Venezuela) (MacDonald, 2015; Uys, 2014; Huckstep, 2015; Swiss Re, 2016). Thanks to the mutual direct contact (such small groups on platforms are mostly formed by people who previously have known each other), it is easier to eliminate high-risk individuals, more mutual trust. Most platforms allow for almost automatic loss adjustment, so that some of them also cover small losses, usually excluded from insurance cover due to very high settlement costs. Unused premiums are refunded to group members, or

[7]Instead of many, see (Morduch, 1999) (De Weerdt'a, Dercon, 2006) (Bloch et al., 2007) and the publications cited therein.

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allocated to other purposes designated by the group (e.g. charity). Groups structured in this way have the characteristics of small mutual insurance associations. Platforms often cooperate with insurers or reinsurers who take over part of the insurance cover (guaranteeing a certain level of benefits) or assist in the administration of policies.

However, the use of informal communities can create additional risks. In the case of operational risk, we are talking about the pooling of professional entities, entrepreneurs. The cover offered in this way may raise doubts about its stability and certainty. On the other hand, the creation of informal communities may cause a reaction from the authorities - in fact, in Europe, an insurance community - an insurance company should have a specific formal organization, capital equipment and, above all, authorization to conduct insurance activity. In some member states, these requirements are limited for small communities (so-called small insurance companies). Although in this area, we can also observe some deviations. The example of 'mutual fund' communities with an insurance character in agriculture can be mentioned here. These have been formally excluded from insurance market regulation, although by offering insurance (or quasi-insurance) cover they can be accredited and regulated by special internal laws of the member states rather than by the rules of insurance law (Janowicz-Lomott & Łyskawa, 2014).

5. Conclusion and Recommendations

The increasing frequency of loss events, which are both systemic and operational risks, is forcing the financial sector to seek new solutions. The solution has been, is now and will be in the future insurance products. However, the asymmetry of information inherent in the functioning of the insurance sector means that a solution is increasingly sought that exploits the relationship and trust between the entities, rather than just the contractual provisions and consequent economic calculation. Mutuality-based insurance is therefore a path based on solutions of the past (primary forms of insurance), but at the same time is seen as a response to the lack of adaptation of insurance products to the actual needs of clients. Consequently, the agency theory (principal-agent dependency) commonly used in modern times is being replaced by the idea of a sharing economy. Modern tools of communication between members of the community facilitate the development of new solutions. Nevertheless, these solutions are often ahead of the legal solutions operating in the countries or economic areas concerned (e.g. the EU). It is therefore necessary to shape new regulations in such a way that they do not limit the creation of what can cover the most difficult risks; in this case, operational risks.

References

Aronson, B. E. (2003). Reconsidering the Importance of Law in Japanese Corporate Governance: Evidence from the Daiwa Bank Shareholder Derivative Case. Cornell Int'l LJ, 36, 11.

Bainbridge, J. (1952). Biogrphy of an Idea: The story of Mutual Fire and Casualty Insurance. N.Y.: Doubleday.

Birkmaier, U.& Laster, D. (1999). Are mutual insurers an endangered spices? Sigma, 4.

Bloch, F.&Genicot, G., Ray, D. (2007). Informal insurance in social networks. Journal of Economic Theory(143), 36–58.

Conflict. (1942). Conflict of Laws. Membership in Associations. Insurance. Interpretation of Policy Provisions as to Contingent Liability Is Matter of Local Concern. Columbia Law Review, 42.

Cummins, J. D.& Doherty, N. A. (2006). The economics of insurance intermediaries. Journal of Risk and Insurance, 73(3), 359-396.

De Weerdt'a, J., Dercon, S. (2006). Risk-sharing networks and insurance against illness. Journal of Development Economics, 337–356.

Doff, R. (2015). Risk management for insurers: risk control, economic capital and Solvency II (3rd edn). LondonRisk Books.

Eisenhardt, K. (1989). Agency Theory: An Assessment and Review. Academy of Management Review, 14, 57-74.

Fama, E. F.& Jensen, M. C. (1983). Separation of Ownership and Control. Journal of Law and Economics, 26, 301-325.

Farrell, G. (2010). Crash of the Titans: Greed, hubris, the fall of Merrill Lynch, and the near-collapse of Bank of America. Currency.

Galor, Z. (2010). Socjologiczno-własnościowy sens „problemu gapowicza" - stosunki lumpenwłasności w Polsce. in: Z. Galor (Red.), Odmiany życia społecznego współczesnej Polski instytucje – polityka – kultura. Poznań: Wydawnictwo Naukowe Wyższej Szkoły Nauk Humanistycznych i Dziennikarstwa w Poznaniu.

Huckstep, R. (2015, Dec 24). Guevara, moral hazard and the future of P2P Insurance. Daily Fintech, strony https://dailyfintech.com/2015/12/24/guevara-moral-hazard-and-the-future-of-p2p-insurance/.

ICMIF, AMICE, (2022), European Mutual Market Share, International Cooperative and Mutual Insurance Federation (ICMIF)

Janowicz-Lomott, M. (2016). Mutual insurance companies on the Polish insurance market — the current situation, opportunities not taken and perspectives for development (selected issues). Insurance Review, Vol. 4, 67-87, https://piu.org.pl/wp-content/uploads/2017/05/WU-2016-04-05-Janowicz-Lomott-en.pdf

Janowicz-Lomott, M.&Łyskawa, K. (2014). The New Instruments of Risk Management in Agriculture in the European Union. Procedia - Economics and Finance, Elsevier, Vol. 9, https://www.sciencedirect.com/science/article/pii/S2212567114000331.

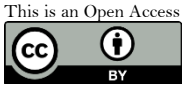
Janowicz-Lomott, M.&Śliwiński, A. (2017). New Role of Mutual Insurers on the Insurance Market. W S. Goić, A. Karasavvoglou i P. Polychronidou (Redaktorzy), Finance in Central and Southeastern Europe, Contributions to Economics. Cham: Springer International Publishing AG.

Jarrow R.A. (2008). Operational risk. Journal of Banking & Finance, Volume 32, Issue 5, 870-879.

Jensen, M. C.&Meckling, W. H. (1976). Theory of the Firm: Managerial Behaviour, Agency Costs and Ownership Structure.

DOI: 10.25103/ijbesar.152.01

Journal of Financial Economics, 3, 305-360.
Kaufman, G. G.& Scott, K. E. (2003). What is systemic risk and does bank regulator contribue to it? The Independent Review, VII(3), 371–391
Kassim, Z. (2012). The Primary Insurance Models. W S. Gonulal, Takaful and Mutual Insurance: Alternative Approaches to Managing Risks. Washington: The World Bank.
Knight, F.H. (1985). Risk, Uncertainty, and Profit . Reprint edition of 1921 with a foreword by George J.Stigler. Chicago: University of Chicago Press
Lamm-Tennant, J.& Starks, L. (1993). Stock versus Mutual Ownership Sructures: The Risk Implications. Journal of Business, 66(1).
Laux, C. & Muermann, A. (2010). Financing risk transfer under governance problems: Mutual versus stock insurers. Journal of Financial Intermediation(19(3)), 333-354.
Ligon, J. A.& Thistle, P. D. (2005). The Formation of Mutual Insurers in Markets with Adverse Selection. The Journal of Business, 78 (2), 529-556.
MacDonald, M. (2015, Jan 29). Digital Friends with Benefits. Post Magazine, 12-13.
MacMinn, R.& Ren, Y. (2011). Mutual versus Stock Insurers: A Synthesis of the Theoretical and Empirical Research. Journal of Insurance Issues, 34 (2), 101-111.
Mayers, D.& Smith Jr., C. W. (2000). Organizational Forms Within Insurance Industry: Theory and Evidence. In: G. Dionne, Handbook of Insurance. Boston: Kluver Academic Publishers.
Mayers, D.& Smith, C. (1986). Ownership structure and control. Journal of Financial Economics, 16, 19-39.
Mayers, D.& Smith, C. (2002). Ownership Structure and Control: Property-Casualty Insurer Conversion to Stock Charter. Journal of Financial Services Research(21).
Mayers, D.& Smith, C. W. (1981). Contractual provisions, organizational structure, and conflict control in insurance markets. Journal of Business, 407-434.
Morduch, J. (1999). Between the Market and State. Can Informal Insurance Patch the Safety Net? Washington DC: Stiglitz Summer Research Workshop on Poverty.
Moosa, I. A. (2007). Operational risk management. New York: Palgrave Macmillan.
O'Donnell, T. (1936). History of Life Insurance in Its Formative Years. Chcago: American Conservation Company.
Płonka. M. (2013). Mutual Insurance Companies as Entities of the Social Economy Sector, Zeszyty Naukowe Uniwersytetu Ekonomicznego w Krakowie. Finance. No. 901, 113-128.
Rejda, G. (1998). Prinncipel of Risk Management and Insurance. Boston: Addison-Wesley.
Renn, O. (2016). Systemic risks: the new kid on the block. Environment, 58(2), 26–36. https://doi.org/10.1080/00139157.2016.1134019
Sangowski, T. (2001). Rola i miejsce ubezpieczeń wzajemnych na światowym i polskim rynku ubezpieczeniowym. W Towarzystwa ubezpieczeń wzajemnych w polskim systemie ubezpieczeń (stan i perspektywy). Poznań: Wydawnictwo Akademii Ekonomicznej w Poznaniu.
Sims, R. R.& Brinkman, J. (2002). Leaders as moral role models: The case of John Gutfreund at Salomon Brothers. Journal of business ethics, 35(4), 327-339.
Smith, A. (1904). An Inquiry into the Nature and Causes of the Wealth of Nations. London: Methuen.
Smith, B. D.& Stutzer, M. (1995). A Theory of Mutual Formation and Moral Hazard with Evidence from the History of the Insurance Industry. The Review of Financial Studies, 8, 545-577.
Smith, B.& Stutzer, M. (1990). Adverse selection, agregated uncertainity and the role for mutual insurance contracts. Journal of Business(63).
Stein, M. (2000). The risk taker as shadow: A psychoanlytic view of the collapse of Barings Bank. Journal of Management Studies, 37(8), 1215-1230.
Stiglitz, J.&Weiss, A. (1981). Credit Rationing in Markets with Imperfect Information. American Economic Review, 71(3), 393-410.
Swiss Re. (2016). Agricultural Insurance in Latin America: Taking Root. Zurich: SwissRe.
Szymański, Z. (1946). Problem sprawności ekonomicznej małego zakładu w teorii ubezpieczeń i rozwiązania francuskie. Spółdzielczy Przegląd Bankowy(7-10).
Trynchuk, V.& Khovrak, I., Dankiewicz, R., Ostrowska-Dankiewicz, A., & Chushak-Holoborodko, A. (2019). The role of universities in disseminating the social responsibility practices of insurance companies. Problems and Perspectives in Management, 17(2), 449-461.
Uys, D. (2014, October). With a little help from my friends. Clipping Risk, 112-113.
Vaughan, E.&Vaughan, T. (2008). Fundamentals of Risk and Insurance. John Wiley & Sons, Inc.
Williamson, O. (1963). Managerial Discretion and Business Behavior. American Economic Review(53), 1032-1057.
Winton, A. (1993). Limitation of Liability and the Ownership Structure of the Firm. Journal of Finance(48), 487-512.
Ji, X., Zhang, Y., Mirza, N., Umar, M., & Rizvi, S. K. A. (2021). The impact of carbon neutrality on the investment performance: Evidence from the equity mutual funds in BRICS. Journal of Environmental Management, 297, 113228.



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