
ANNALES
UNIVERSITATIS MARIAE CURIE-SKŁODOWSKA
LUBLIN – POLONIA

VOL. LX, 2

SECTIO H

2026

MONIKA KACZAŁA

m.kaczala@ue.poznan.pl

Poznań University of Economics and Business. Institute of Finance

al. Niepodległości 10, 61-875 Poznań, Poland

ORCID ID: <https://orcid.org/0000-0003-1868-7835>

BARTOSZ BISIOR

btbisior@gmail.com

ORCID ID: <https://orcid.org/0009-0003-3828-7166>

*Beyond the Intervention: Economic Theory Justification and
Assessment of Unit-Linked Policy Returns in Poland's Household
Investment Portfolio*

Keywords: interventionism; unit-linked insurance; misselling; return rate

JEL: G14; G22

How to quote this paper: Kaczala, M., & Bisior, B., (2026). Beyond the Intervention: Economic Theory Justification and Assessment of Unit-Linked Policy Returns in Poland's Household Investment Portfolio. *Annales Universitatis Mariae Curie-Skłodowska, sectio H – Oeconomia*, 60(2), 43–60.

Abstract

Theoretical background: Unit-linked life insurance has been used in Poland since the 1990s as protection-investment products. Despite their long market presence, these products remain controversial due to misselling practices, high fees, low returns, and complex structures. Previous regulatory measures have proven insufficient in ensuring adequate client profitability. In July 2021, the Polish Financial Supervision Authority (KNF) implemented the first product intervention for unit-linked life insurance, aimed at increasing client benefits and limiting exposure to excessive investment risk. Product intervention is typically examined from a regulatory perspective, with limited attention given to its foundations in economic theory.

Purpose of the article: This paper examines the economic rationale for product intervention and provides introductory assessment of the impact of the 2021 intervention on unit-linked life insurance profitability compared to alternative household investment assets (ETFs and treasury bonds).

Research methods: For the identification of economic rationale for product intervention the critical literature review and evidence-based market dysfunction analysis were used. The empirical analysis simulated investments in selected unit-linked life insurance products, incorporating contractual fees, and benchmarked the resulting returns against alternative household asset portfolios.

Main findings: The study identifies four key market dysfunction categories: deviations in product information, pricing, future expectations, and bargaining power balance. Preliminary evaluation of the 2021 regulatory intervention's consequences reveals that while insurance-investment products demonstrate competitive investment results, their multi-component fee structure effectively eliminates this advantage compared to alternative investment instruments available to retail investors.

Introduction

Unit-linked life insurance (ULI) has been present on the Polish market since the early 1990s, under the name “investment fund insurance” until 2003. They constitute an essential part of the market. This is due both to their share within life insurance premiums written, which currently stands at 17%, although in the record year 2017 it reached 46% (Polish Chamber of Insurance, 2024), as well as to the heterogeneity of these products and their use in the third tier of the pension system.

ULI raises a number of debates in the market, mainly as a result of inadequacies that are related to asymmetry of information, misselling, the level of fees and commissions, investment returns and the high complexity of the product. These problems affect almost all EU countries, although with varying degrees of intensity (EIOPA, 2019, 2020, 2021, 2022, 2023, 2024a).

The above-mentioned irregularities were also widespread on the Polish market being the subject of interest of numerous entities, including the Office of Competition and Consumer Protection (UOKiK), the Polish Financial Supervision Authority (KNF), the Financial Ombudsman, the Polish Chamber of Insurance (PIU) and the National Bank of Poland (NBP). Measures aimed at limiting these irregularities – despite their number, scope and the multiplicity of institutions involved – have proved insufficient, especially in terms of ensuring adequate profitability of these products for customers.

As there were also no regulatory requirements at the level of EU law that obliged insurance investment product developers to generate product value for the customer at a certain level, the KNF decided to introduce a product intervention for ULI on 15 July 2021 (*Decyzja Komisji Nadzoru Finansowego w zakresie interwencji produktowej z dnia 15 lipca 2021 r.*, 2021). This intervention was the first of its kind on the financial market in Poland and caused serious practical disruptions.

The product intervention aimed to better protect clients by increasing their benefits from ULI and reducing excessive investment risks, particularly liquidity risks, from investing in *contingent convertibles*. The first goal was to increase investment returns by reducing fees and costs charged by insurance companies. Low or negative effective returns and high fees resulted in poor value of unit-linked insurance for clients, according to the KNF.

The purpose of this article is to present the rationale for product intervention from an economic theory perspective and to preliminarily examine the impact of the 2021 product intervention on the profitability of ULI for the client compared to other investment assets available to households, i.e., ETFs and Treasury bonds.

Profitability analyses of ULI to date have covered the period prior to product intervention and, moreover, have often focused on capital investment funds exclusively linked to the third tier of the pension system and have typically not considered product costs.

This study consists of four parts: a literature review, which includes a diagnosis of the situation on the ULI market and an interpretation of the identified phenomena in the context of the economic theory of state intervention, a description of the methodology used in the empirical part, research results and a discussion.

Literature review

Diagnosis of the unit-linked life insurance market situation before the product intervention

ULI operating on the market in Poland for more than 30 years are products that arouse major controversies. These result from a series of phenomena which, although affected only part of the portfolio, strongly influenced the assessment of the entire group. They related in particular to (1) misselling and product distribution abuses, (2) difficulties in customer understanding of the product and (3) fee and commission structure and low profitability.

Sales irregularities manifested themselves primarily through the distribution of products to an inappropriate group of customers, the presentation of information on the parameters of the offered product in an incomplete or unreliable manner by insurance intermediaries (e.g.: liquidation fees related to early termination of the contract or partial withdrawal of capital), failure to provide documentation and producing unrealistic forecasts of potential return on investment (Insurance Ombudsman, 2012; Padoszyńska, 2019; Romanowski & Romanowski, 2014). This was caused, among other things, by the distribution model operating on the Polish market, which generally lacks territorial restrictions (Wisniewski, 2016), the information advantage of intermediaries and the way agents are remunerated (commission for the premiums written) (Advisory Scientific Committee to the Financial Ombudsman, 2019).

Misselling controversies were compounded by the complexity of ULI contracts. Based on analysis of customer complaints, the Insurance Ombudsman clearly stated that the average consumer was unable to properly understand the information provided and make an informed decision about choosing a ULI product (Insurance Ombudsman, 2012). This was due, *inter alia*, to the amount of information provided, the lack of accessibility to certain annexes, the use of complicated formulae, the frequent change of terms and conditions and, above all, the lack of knowledge and skills to interpret

them correctly (Advisory Scientific Committee to the Financial Ombudsman, 2019). Moreover, profitability of this insurance is influenced not only by the length of the investment period, but above all by the investment strategy indicated by the client (Homa, 2022), the proper selection and subsequent modification of which in response to changing market conditions is a major challenge for the policyholder. In unit-linked insurance, the flexible balance between protection and investment means the product's nature depends heavily on client choices, which often exceed policyholders' understanding and decision-making capacity. Moreover, on the basis of the concluded contract or general insurance conditions (GTC) it is impossible to precisely reconstruct the capital allocation rules, which results in a unilateral determination of the insurer's obligation without the possibility of verifying the correctness of the calculation by the policyholder (which may, by the way, constitute a premise for the invalidity of the contract) (Szaraniec, 2021). It should also be additionally noted that customers had very little knowledge of their rights and expressed many concerns regarding their enforcement (Zorski-Sikora et al., 2023).

A number of corrective measures have been taken in response to the problems of misselling, product distribution abuse and the limited ability of customers to understand the products. These practices have been curbed primarily as a result of the UOKiK actions, introduction of new regulations in the Act of 11 September 2015 on Insurance and Reinsurance Activity (Kowalczyk-Rólczyńska & Pisarewicz, 2015), the Act of 17 December 2017 on insurance distribution, as well as a number of other regulatory, analytical and supervisory actions undertaken by the KNF (including the Guidelines for insurance companies on insurance distribution, issued on 24 June 2014, Position on insurance in Group 3 of Section I of the Annex to the Act on Insurance and Reinsurance Activity of 11 September 2015, Recommendation U on good bancassurance practices, issued on 22 March 2016, Recommendations for insurance companies on product suitability testing, issued on 22 March 2016, Recommendations for insurance companies on the product governance regime, issued on 23 October 2018, Positions on the application of Article 21 of the Insurance and Reinsurance Business Act, published on 17 July 2019).

A product combining insurance protection with an investment element, such as ULI, is also not very transparent to the customer in terms of costs (various cost categories, including mortality charges, which are not nominally indicated). Such low transparency enables insurance companies to charge high cost mark-ups and profit margins on their products (Wisniewski, 2012). The termination fee has been particularly controversial. There has been extensive discussion in the literature on the validity and amount of termination fee (Financial Ombudsman, 2016; Lisowski, 2015; Romanowski & Romanowski, 2014; Szczepańska, 2012, 2017; Wisniewski, 2016). It was not only its amount that was problematic in practice, but also the fact that the client was most often unaware of it, although its amount was indicated in the GTC (Szczepańska, 2012). Nevertheless, other fees and commissions (very differently named) were also questionable, and the abuse in this area was manifold (see in details: KNF, 2022).

As of 15 July 2021, the problem of investment products with high termination costs has ceased to exist (*Decyzja...*, 2021). However, this does not mean that the situation related to costs sewn into ULI has been fully normalised. In 2021 – i.e., before the product intervention – despite repeated actions by the KNF, ULI's policyholders were charged high fees and their funds were invested in risky and insufficiently diversified assets. There were also long delays in customer payments reaching up to several months (*Decyzja...*, 2021).

One of the characteristic features of ULI is the presence of investment risk, which in these products is borne entirely by the policyholder (cf. Article 277, paragraph 3, point 6 of the Act of 15 September 2015 on Insurance and Reinsurance Activity). Very often, customers were not aware of this and ULI was erroneously offered as a safe product with a certain and high return (Insurance Ombudsman, 2012).

A study of the effectiveness of 242 capital investment funds (CIF) linked to the Individual Pension Accounts (IKEs) was conducted by Cwynar et al. (2016). Logarithmic weekly returns for the period from 29 December 2006 to 25 September 2015 were analysed. Treynor's index and Jensen's alpha were used to assess the performance of the ETFs studied. A portfolio consisting of 90% of the WIG index and 10% of WIBID3M was used as a benchmark. The average returns of the CIFs were also compared with the average returns achieved by the Polish market equity open-end investment funds (FIOs). Over the stated period, both CIFs and FIOs underperformed the benchmark, with FIOs doing slightly better. The researchers also noted a tendency for CIFs to "replicate" the market which may be indicative of a passive management model. Similar results were obtained by Dopierała and Wojciechowski by examining 16 funds linked to IKE with declared moderate and high investment risk in the period 1 January 2005 – 30 June 2014 using the Henriksson–Merton model (Dopierała & Wojciechowski, 2014). The results of the study indicate that some of the funds in the period studied achieved an average monthly return lower than the assumed average risk-free return, and that the funds were mostly passively managed (even active funds). Dopierała also studied the performance of the 56 CIFs available under IKE between 2005 and 2015 (Dopierała, 2017) by calculating logarithmic monthly returns and the Sharpe ratio. He found that all externally managed CIFs and internally managed bond CIFs achieved lower returns on average than the assumed risk-free rate, and the average return of the remaining funds was lower than that of a passive portfolio based on the Polish equity market, although the variation in the performance of individual funds was significant. Drozd, on the other hand, examined the efficiency and risk of investing in five precious metals investment funds, including two CIF funds. The analysis was based on weekly data from 30 September 2014 to 6 October 2019 and was based on the Treynor, Sharpe, Jensen index and the Sortino, UPR and Omega risk measures (Drozd, 2020). It was indicated that investments in the precious metals market are high risk and returns are lower than expected.

The analyses available in the literature on CIF in the Polish market are based on publicly available data, i.e. investment performance, and do not take into ac-

count data which only the KNF has access to. According to the KNF analysis for 2018/2019 and 2019/2020, the average return was negative, ranging from -1.6% to -6.7%, while the ratio of benefits (policy value taking into account the time value of money and other benefits such as death benefit computed using expected actuarial values) to contributions was generally around 65 to 75% (*Opinion of the European Insurance and Occupational Pensions Authority on the Proposed Product Intervention Measure of the Komisja Nadzoru Finansowego of Poland*, 2021). At the same time, margins generated by the ULI product for insurance companies (computed as discounted profits divided by discounted premiums, including lapses, cost of capital and risk margin) were positive with values ranging from 5 to 20%. Compared to other products of this type offered on the European market, the Polish market was in terms of reduction in yield (RIY) at the recommended holding period (RHP) the most expensive in 2018 and 2019 (*Opinion of the European...*, 2021). In addition, high management fees were most often not associated with diversification and pursuing an active investment policy (*Decyzja...*, 2021). It can therefore be concluded that the high asset management costs charged to investors (policyholders) and the excessive risk charges (in the insurance part of the product), as well as the investment performance achieved, resulted in products that were unprofitable for consumers.

The facts described above and the fact that regulation at the EU level does not sufficiently address the risks of retail investor protection, in addition to other requirements (proportionality of action, consultation with competent authorities in other Member States and non-discrimination of cross-border activities) allowed the requirements of Art. 17(2) of Regulation (EU) No. 1286/2014 of the European Parliament and of the Council of 26 November 2014 on key information documents for packaged retail and insurance-based investment products (PRIIPs) (OJ EU L 352, p. 1, as amended) and product intervention. On 15 July 2021, the KNF decided to prohibit the marketing, distribution and sale of insurance investment products, i.e., life insurance contracts if they are linked to CIF – that meet at least one of two criteria, i.e., (1) for which the average return is less than 50% of the interest rate for the period specified in the decision according to the relevant risk-free rate term structure, or (2) for which the investment rules and restrictions set out in the rules of the insurance capital fund do not ensure that the funds of the insurance capital fund are not invested in contingent convertibles (*Decyzja...*, 2021).

Justification of product intervention in the light of the economic theory of state intervention

Product intervention is most often analysed from a regulatory perspective (Mro-zowska-Bartkiewicz, 2019; Szaraniec, 2021; Wajda, 2021). Few of these analyses (Łańcucki, 2017), and only to some extent, address the topic of product intervention in the light of the economic theory of state intervention. However, this perspective is

essential for understanding the importance and desirability of the action taken by the KNF. In doing so, it is worth distinguishing between two approaches: normative (what the state should do in a given situation in a specific market) and positive (what the state actually does and what the effects are) (Stiglitz, 2000). The former approach is the starting point of this subsection, the latter justifies the empirical part of the study.

According to the economic theory of state intervention, markets allocate resources efficiently when a number of assumptions are met (Barr, 2012), i.e., (1) there is perfect competition, (2) there are no distortions related to externalities, public goods or increasing returns to scale, (3) actors maximise their utility in the context of well-behaved utility and production functions, (4) markets are complete, (5) there is no taxation that distorts market mechanisms, and (6) sellers and buyers have perfect information. The last assumption, concerning complete information, covers three aspects: the quality (nature) of the product, prices and the future. Market efficiency increases the better informed the customer is, the cheaper and more efficient it is to improve the customer's degree of information, the easier it is for the customer to understand the available information, the lower the costs of poor choice and the more diverse the customer's tastes (Barr, 2001, 2012). Complete information is also necessary in order to meet the assumptions that guarantee the rationality of the decision-maker's choice, i.e., to maximise utility (the third condition).

The lack of perfect information, therefore, leads to a suboptimal economy, violating two of the six conditions mentioned above. It can also cause information asymmetry, i.e., a situation in which different people have different information (Stiglitz, 2000), so in other words, one of the parties to the market game (transaction) has relatively better (i.e., more reliable and complete) information, for example, regarding the object or nature of the exchange (Rothschild & Stiglitz, 1976) and its quality and price (Just et al., 2004). Imperfect information therefore disturbs the equilibrium with respect to the power of counterparties. Imbalance can also occur with perfect information, but when it is accompanied by limited opportunities for either party to implement its decisions. This occurs when there are constraints on the availability of certain products due to other – besides budgetary constraints – considerations (e.g., age, but also knowledge of one's rights) (Barr, 2012).

The presence of imperfect information or unequal power results in inequality of access and thus a violation of horizontal equity as an element of social justice (Barr, 2012). Thus – in addition to efficiency arguments – there is a social rationale justifying state intervention. This intervention in this case can take various forms, including regulatory ones, i.e., the introduction of minimum standards for product quality.

Some of the findings of behavioural economics should also be recalled in the context of the problem at hand. This body of work indicates that even when information is available (will be provided), there may be problems in processing (understanding) it.¹ These occur in particular when the time perspective is distant, the information is

¹ This is very aptly reflected in Simon's (1990) statement: "Human rational behaviour is shaped by

complex, the probability of an event is low (a matter of perceiving low probability events) and the level of financial education is low (Duclos, 2015; Harrison, 2019; Hu et al., 2024; Orquin et al., 2018).

In the case of ULI, therefore, many deviations from the assumption of optimality can be identified. These occur both on the side of the insurer and the customer. In view of the purpose of this paper, the aspects important for insurance companies (e.g., independence and randomness of events, adverse selection, moral hazard, etc.) will be omitted. Elements important from the customer's point of view can in turn be grouped into: (1) product information deviations, (2) price, (3) balance of bargaining power and decision feasibility, and (4) future. Within these individual areas, the following can be identified in particular:

1. In terms of customer information on the nature of the commodity (investment and insurance parts):
 - limited information on how to save and secure protection against specific random events (insurance part);
 - a lack of information or understanding on the clients' side regarding the frequency of specific event (e.g., death from a specific cause) or the amount of funds required to meet the stated objective in the insurance part (e.g., safeguarding descendants), as well as volatility and risk factors in the investment market;
 - obtaining information mainly from the distributor (the insurer or the insurance intermediary – most often the insurance agent, acting in the name of or on behalf of the insurer; in practice also from a person carrying out agency activities who is contractually bound with the insurance agent);
 - the difficulty for clients to verify or compare information obtained from other sources due to its nature (high degree of professionalisation of information);
 - a lack of understanding by clients of the cost structure and the consequences of ending the contract especially in the first years of the contract. The duration of the contract is often not specified, however, due to its investment nature, the recommended contract duration is at least 5–10 years. This implies a high cost of mistaken choice.
2. In terms of price information:
 - customers are not in a position to judge how much a product, either the insurance or investment part, “should” cost;
 - knowledge gained in the past, especially regarding the insurance part, is outdated due to the fact that the probability of death (and therefore the valuation of the risk of death) increases with age.

a scissors whose two blades are the structure of task environments and the computational capabilities of the actor” (p. 7).

3. In terms of implementation of the decision taken and equal power:
 - the insurance contract is adhesionary in nature, meaning that customers accept, rather than negotiate, its terms;
 - the policyholder is entirely responsible for the investment risk;
 - the policyholder is not in a position to accurately reconstruct the investment procedures and thus control the actions of the insurer, especially as the contract is handled entirely by the latter;
 - clients usually do not realise that a ULI requires them to be proactive in their investments and respond with a change of strategy to market conditions;
 - clients are usually not aware of their rights and are not without concerns in enforcing them (this applies both to the amount of benefits, delays in payment and denial of benefits).
4. In terms of forward-looking information:
 - the client does not know how long he will live or what the cause of his death will be;
 - the client does not know how macroeconomic factors (e.g., inflation), investment performance and whether financial crises will develop.

Research methods

Due to the large number of products available on the market, the study was limited to single-premium life insurance policies with a distinct investment character and reduced insurance component. The products were selected based on data from the Analizy.pl website, which, at the time of the survey, included nine such insurance products provided by seven different companies. Products for which the GTS in force on 3 January 2022 were not available were eliminated from the sample. Out of the remaining ones, five products with the highest number of offered CIFs were selected, assuming that this is a beneficial feature for the insured. Insurance products which met the aforementioned criteria and were thus selected for the study were two offered by PZU – Multi Kapitał II and Świat Inwestycji Premium II, two from Vienna Life – CAPITAL INVESTMENT+ and Net Invest 2.0, and one from Compensa – Flexi Plus.

ETFs and treasury bonds were selected for comparative analysis. Both CIFs, ETFs and bonds are instruments commonly offered to non-professional market participants, as opposed to more sophisticated asset classes requiring significant initial capital or specialist knowledge.

All ETFs listed on the Warsaw Stock Exchange and three series of retail Treasury bonds available to the investor as of 3 January 2022 were selected for benchmarking. The selected ETFs are BETA ETF MWIG40TR, BETA ETF SWIG80TR, BETA ETF WIG20TR, BETA ETF S&P 500, BETA ETF NASDAQ-100, ETFSP500 MULTI UNITS LUXEMBOURG, ETFDAX MULTI UNITS LUXEMBOURG, BETA ETF WIG20LEV, BETA ETF WIG20SHORT and Beta ETF Bonds 6M. The bond series

selected were TOZ0125, COI0126 and EDO0132. The decision to include them in the study was determined by the fact that their maturity is longer than the adopted analysis period and their accessibility is not dependent on being a beneficiary of the 500+ programme. By applying the above criteria, the risk of reinvestment was reduced and products that could not be accessed by an investor were eliminated.

The available CIFs, within each of the insurance products selected for analysis separately, were divided into four categories – equity, mixed, debt securities and commodities – based on the classification of these funds from the Analizy.pl website. Based on the simple rate of return calculated for each CIF achieved between 3 January 2022 and 3 June 2024 in each category, the CIF with the best performance, the CIF with the median performance and the CIF with the worst performance were selected. Next, three portfolios were created for each product – one composed of the UFK with the best performance, one composed of the UFK with median performance, and one composed of the UFK with the worst performance. Each portfolio consisted of 40% equity CIF, 20% mixed CIF and 40% debt securities CIF. Where a category contained an even number of CIFs, the median portfolio consisted of two CIFs from the category with an equal share of the portfolio. As commodity CIFs were only available in Vienna Life products and there was no equivalent among the ETFs selected for the analysis, they were not included in the study.

The ETFs selected for benchmarking were split into equity and debt securities, while treasury bonds were categorised as debt securities in each case. As in the case of CIF, three portfolios were assembled from ETFs and treasury bonds, consisting of 50% equity ETFs and 50% debt securities ETFs or treasury bonds. Analogous to the CIF portfolios, three portfolios were constructed from the assets with the highest, median and lowest returns over the study period.

CIFs are characterised by a specific time structure determined by the terms of the insurance contract, which significantly differentiates them from ETFs that are more flexible in terms of investment horizon and from bonds with defined maturities. The study assumed a period of analysis from the entry into force of the product intervention until the time of the study, i.e., from 3 January 2022 to 3 June 2024. This was assumed to be the time when the assets are in the investor's portfolio and no modifying movements (termination of the contract, sale) are made.

In order to calculate ETF returns during the period under review, quotations from the Biznesradar.pl website were relied upon (Biznes Radar, n.d.). In the case of Treasury bonds, interest tables from the website Obligacjeskarbowe.pl (Obligacje skarbowe, n.d.) were relied upon. If a particular bond series pays interest during the period under review, resulting in an obligation to pay Belka tax, this was taken into account in the calculation of the return. In the case of CIF, data from the websites of the insurance companies that offered the product in question were relied upon.

The study hypothesised: Despite the product intervention, life insurance with CIF, as a product associated with a large number of fees and commissions, achieves lower returns than investments in ETFs and treasury bonds.

Results

Table 1 shows the returns for each of the portfolios constructed for the analysis.

Table 1. Returns on portfolios of CIFs and portfolios of ETFs and Treasury bonds assembled for the study over the period 3 January 2022 – 3 June 2024 (in %)

Product	Portfolio of assets with the highest rate of return	Portfolio of assets with median return	Portfolio of assets with the lowest rate of return
PZU – Multi Capital II	34.92	19.28	-14.02
Vienna Life – CAPITAL INVESTMENT+*	23.98	7.99	-10.20
PZU – World of Premium Investments II	12.43	4.23	-24.98
Vienna Life – Net Invest 2.0	23.98	7.99	-10.20
Compensa – Flexi Plus*	19.57	15.61	10.88
Portfolio of ETFs and Treasury bonds	27.60	12.94	-14.54

*Vienna Life has drawn up an identical range of available CIF funds for both products.

Source: Authors’ own study based on (Biznes Radar, n.d.; Funds Compensa, n.d.; Fund Listings, n.d.; Obligacje skarbowe, n.d.; UFK Listings, n.d.).

As can be seen from the data in Table 1, before taking into account the costs associated with the insurance contract, one portfolio composed of CIFs with the highest return achieved a higher return than a comparable portfolio composed of ETFs and government bonds. For portfolios of assets with a median return, two portfolios composed of the available CIFs in the analysed products would have allowed the investor to achieve a higher return. On the other hand, for portfolios composed of assets with the lowest return, the comparable portfolio performed worse than three portfolios composed of CIFs (for both Vienna Life products, the portfolios are composed of identical funds and are therefore counted as one portfolio before costs).

In order to analyse the impact of the cost of insurance with CIFs on the investor’s rate of return, a model was built for each of the selected insurance products, taking into account all the fees and commissions provided for the contract. The following assumptions were made for the construction of each model:

- the contract is concluded on 3 January 2022, which is the first day of the product intervention issued by the KNF on 15 July 2021. The analysis ends on 3 June 2024, the last quotation day available at the time of the simulation, which corresponds to a full month of the policy;
- the method of calculation, collection and amount of fees and commissions for each product was adopted in accordance with the GTC document, the fund rules and the table of fees and limits applicable to contracts concluded on 3 January 2022;
- for the purpose of calculating the cover charge, it was assumed that the model policyholder insured at the time of entering into the contract was 43 years of age, which corresponds to the median age from the CSO report (Lisiak & Małek, 2024);

- as the subject of the study was not allocation, but only the impact of costs on investment performance, it was assumed that the model policyholder has a passive approach and does not change the portfolio composition throughout the contract period;
- it was assumed that the model policyholder only pays a single premium of PLN 50,000 at the start of the contract;
- three simulations were performed for each product – for the CIF portfolio with the highest return, the CIF portfolio with the median return and the CIF portfolio with the lowest return;
- costs were simulated on a daily interval basis, based on the daily valuations of the individual CIFs;
- if a given product offered CIF in other currencies and they constituted the composition of a given portfolio, all currency conversions resulting from the GTC were made at the NBP average daily exchange rate valid on the date of conversion;
- no indexation of benefits and charges was assumed.

Table 2 shows the total fees and commissions that would have reduced the investor's capital under the various products and portfolios. The differences in fees and commissions charged between products vary significantly and, depending on the choice of contract and portfolio composition, between PLN 1,605.12 and PLN 3,984.17 would be deducted from the investor's capital. Within a given product, the differences between portfolios are insignificant and result from the fees and commissions, which are calculated as a % of the value of the funds in the portfolio.

Table 2. Total costs incurred by the investor under individual contracts (in PLN)

Product	Portfolio of assets with the highest rate of return	Portfolio of assets with median return	Portfolio of assets with the lowest rate of return
PZU – Multi Capital II	2,060.40	2,048.13	1,941.86
Vienna Life – CAPITAL INVESTMENT+	2,824.28	2,796.56	2,728.37
PZU – World of Premium Investments II	2,140.47	2,158.16	2,011.61
Vienna Life – Net Invest 2.0	3,984.17	3,961.48	3,905.80
Compensa – Flexi Plus	1,640.84	1,651.15	1,605.12

Source: Authors' own study.

Through simulations, rates of return net of costs were obtained for selected insurance products. The modified rates of return are shown Table 3. For the comparison portfolio, no simulations were carried out due to the lack of additional costs that would be associated with investing in ETFs and Treasury bonds.

Table 3. Returns on the portfolios of CIFs assembled for the study for the period 3 January 2022 – 3 June 2024, after taking into account fees (in %)

Product	Portfolio of assets with the highest rate of return	Portfolio of assets with median return	Portfolio of assets with the lowest rate of return
PZU – Multi Capital II	26.06	1.38	-20.23
Vienna Life – CAPITAL INVESTMENT+	16.92	2.20	-15.31
PZU – World of Premium Investments II	4.95	-2.41	-31.98
Vienna Life – Net Invest 2.0	14.05	-0.30	-17.39
Compensa – Flexi Plus	15.32	11.87	9.38

Source: Authors' own study based on (Biznes Radar, n.d.; Funds Compensa, n.d.; Fund Listings, n.d.; Obligacje skarbowe, n.d.; UFK Listings, n.d.).

After taking the costs into account, among portfolios composed of CIFs with the highest and median returns, none exceeded the return of the comparison portfolio. On the other hand, among portfolios composed of CIFs with the lowest rate of return, only the portfolio from the funds available under the Compensa product managed to achieve a higher rate of return.

Discussion

Before insurance contract charges were taken into account, half of the CIF portfolios achieved a better rate of return than the corresponding portfolios created for the analysis from the lowest cost assets in the market. The results obtained are difficult to compare directly with previous studies, as a different benchmark and different measures were used. Indeed, the efficiency of investment funds can be measured in different ways (Aragon & Ferson, 2006; Goetzmann & Ingersoll, 2006; Zamojska, 2012), and the use of a particular method affects the conclusions drawn (Ostrowska-Dankiewicz, 2015). However, it can be argued that a clear advantage of CIF portfolios over portfolios composed of ETFs and Treasury bonds, and vice versa, was not demonstrated. On the other hand, after taking fees into account, only one of the twelve CIF portfolios outperformed the corresponding comparable portfolio. This portfolio was composed of the CIFs with the worst return over the analysis period and with the lowest costs. This means that in the case of products with CIF, the examination of investment performance alone, without taking costs into account, can lead to erroneous conclusions in terms of added value for the customer.

The insurance cover provided under the contracts could justify such high charges and lower overall rates of return. However, the products chosen for analysis are almost exclusively investment products and the possible death benefit is, with the exception of one product (Flexi Plus), linked to the value of the funds accumulated in the account and exceeds the size of the funds by a maximum of 5% (in the best products and only if the death of the insured occurs up to the age of 60). Essentially,

if the policyholder wished to satisfy the need to protect the insured in the event of death by securing a known benefit sum in advance, they would need to purchase an additional insurance product. Therefore, it can be concluded that it is not the risk charge but other charges (variously called, e.g., administration fee, distribution fee, entry fee, base payment, etc.) that effectively nullify any possible comparative advantage. At the same time, the products offered – according to the KNF's analysis – meet the requirements of product intervention (KNF, 2023, 2024). This means that, in the opinion of the KNF, a balance is struck between the interests of the customer and the interests of the insurance company (*Decyzja...*, 2021).

In addition, it should be pointed out that certain provisions in the contractual templates of selected ULI, concerning fees charged in connection with the termination of insurance contracts by consumers (in the case of individual insurance contracts), were qualified by the president of the UOKiK in 2023 as prohibited clauses (cf. decision DOZIK-3/2023 and decision DOZIK-7/2023 of the president of the UOKiK). This means that despite the KNF's 2022 position on presenting fees in ULI contracts (Financial Supervision Authority Office, 2022) and discussions on costs (particularly regarding termination fees), standard contract templates for ULI products still contain fee provisions that were not individually agreed with the consumer. These provisions shape rights and obligations in a manner contrary to good practices, thus grossly violating consumer interests (Rutkowska-Tomaszewska & Zwaliński, 2023). The analysis carried out in this study clearly indicates that these costs may dramatically change the level of profitability of the product for the consumer, which is another argument in favour of considering such provisions as detrimental to the interest of the insured, policyholder or beneficiary under the insurance contract.

When analysing the above results, it is important to bear in mind that the period covered by the survey is shorter than the insurers' recommended contract period. For the contracts with the highest fees, which are Vienna Life products in the sample, bonuses were provided for the insured on the fifth and tenth anniversaries of the contract. The historical investment return is also affected by the time interval. The highest fees for the product Świat Inwestycji Premium II and Flexi Plus would have been charged for portfolios composed of CFIs with a median return, even though they did not produce the highest return during the study period. This is because, in certain sub-periods, these portfolios produced a higher return than a portfolio composed of assets with the highest return.

The presented research results, although covering only sample products and over a limited period, may constitute a significant predictor of potential disruptions in the contractual balance between consumers and insurance companies that continue to operate in the market. They thus signal the need for strict monitoring and possible implementation of further preventive and intervention measures by supervisory institutions.

The issue is extremely difficult. The irregularities in the ULI market to date and the action taken, in terms of enacting both so-called hard and soft law, have clearly

impeded the development of the market. Subsequent interventions have resulted in a decline in the share of ULI in life insurance market. From being dominant products between 2014 and 2017, they became products contributing just over 17% of written premium in 2022 and 2023, losing 28.5 p.p. to the leader (ordinary life and endowment insurance) (Polish Chamber of Insurance, 2024). The largest decrease in share (by 14.1 p.p.) occurred in 2018 and 2022 (by 8.2 p.p.) – following product intervention by the KNF. This structure is atypical for the European market, where the share of index-linked and ULI amounted to almost 35% of life insurance gross premiums written at the end of 2023 (EIOPA, 2024b).

Conclusions

The diagnosis of the unit-linked life insurance market situation in Poland allowed for the identification of four groups of factors that, in light of the economic theory of state intervention, lead to suboptimal resource allocation., i.e., (1) deviations in product information, (2) price, (3) balance of power and the possibility of implementing decisions, and (4) information about the future. They justify state intervention – in addition to the rationale related to the violation of horizontal equity as an element of social justice – in the case of ULI, it took the form of regulatory intervention, i.e., the introduction of the so-called minimum standards in terms of product quality in the form of the KNF's first product intervention on the financial market in Poland in July 2021.

The minimum return regulations introduced for these products were intended to balance the interests of the customer and those of the insurance company. However, a preliminary examination of the impact of the 2021 product intervention on the profitability of ULI for clients compared to other investment assets available to households (ETFs and Treasury bonds) revealed significant findings. The ULI with a dominant investment element offered by insurers achieve investment results that are comparable to or better than other assets available to households with lower fees. However, the financial charges accompanying these instruments completely eliminate this comparative advantage.

A longer time horizon is required to fully assess the impact of product intervention. This is because the analyses carried out cover a shorter period than recommended by insurance companies. The study can be extended in the future to include other ULI products (also those with a significant protective function or others, as the group of these products is highly heterogeneous), as well as other assets available to households, such as bank deposits, direct investments in shares or investment funds. It is also important to be aware that the relationship between profitability of ULI and other assets can also be influenced by many other regulatory and market elements in addition to the aforementioned intervention.

The limited representativeness of the data does not depreciate its value as a mechanism for early identification of further violations in the market. A study of this type

signals the need for close monitoring and possible implementation of further preventive and intervention measures by supervisory institutions. Conducted, on the other hand, on a larger sample and over a longer period, they will allow an assessment of the effectiveness of product intervention as a regulatory policy tool.

References

- Advisory Scientific Committee to the Financial Ombudsman. (2019). *Nieprawidłowości na rynku finansowym a ochrona konsumenta*. <https://rf.gov.pl/edukacja/baza-wiedzy/analizy-i-raporty/>
- Act of 15 September 2015 on insurance and reinsurance activity (Journal of Laws 2024, item 838, as amended).
- Aragon, G.O., & Ferson, W.E. (2006). Portfolio performance evaluation. *Finance*, 2(2), 83–190. <https://doi.org/10.1561/05000000015>
- Barr, N. (2001). *The Welfare State as Piggy Bank. Information, Risk, Uncertainty, and the Role of the State*. Oxford University Press.
- Barr, N. (2012). *Economics of the Welfare State*. Oxford University Press.
- Biznes Radar. (n.d.). *EFT Notations*. <https://www.biznesradar.pl>
- Cwynar, A., Cwynar, W., Kaźmierkiewicz, P., & Ostrowska-Dankiewicz, A. (2016). Efektywność ubezpieczeniowych funduszy kapitałowych w Polsce. *Market, Economy, Society*, 45, 29–51. <https://doi.org/10.17451/eko/45/2016/203>
- Decyzja Komisji Nadzoru Finansowego w zakresie interwencji produktowej z dnia 15 lipca 2021 r., Dziennik Urzędowy KNF z 16.07.2021 r., poz. 16. https://dziennikurzedowy.knf.gov.pl/DU_KNF/2021/16/akt.pdf
- Dopierała, Ł. (2017). Efektywność produktów emerytalnych oferowanych przez zakłady ubezpieczeń na życie na przykładzie IKE. *Journal of Finance and Financial Law*, 2(14), 23–39. <https://doi.org/10.18778/2391-6478.2.14.03>
- Dopierała, Ł., & Wojciechowski, L. (2014). Efektywność inwestycji ubezpieczeniowych funduszy kapitałowych dostępnych w ramach indywidualnych kont emerytalnych w świetle modelu Henriksa–Mertona. *Studia i Prace Wydziału Nauk Ekonomicznych i Zarządzania*, 41(3), 55–67.
- Drozd, A. (2020). Ocena ryzyka i efektywności inwestycji na rynku metali szlachetnych. *Economics–Wrocław Economic Review*, 26(1), 125–137. <https://doi.org/10.19195/2658-1310.26.1.8>
- Duclos, R. (2015). The psychology of investment behavior: (De)biasing financial decision-making one graph at a time. *Journal of Consumer Psychology*, 25, 317–325. <https://doi.org/10.1016/j.jcps.2014.11.005>
- EIOPA. (2019). *Consumer Trends Report 2019*. <https://doi.org/10.2854/503448>
- EIOPA. (2020). *Consumer Trend Report 2020*. <https://doi.org/10.2854/50572>
- EIOPA. (2021). *Consumer Trends Report 2021*. <https://doi.org/10.2854/06150>
- EIOPA. (2022). *Consumer Trends Report 2022*. <https://doi.org/10.2854/457958>
- EIOPA. (2023). *Consumer Trends Report 2023*. https://www.eiopa.europa.eu/publications/consumer-trends-report-2023_en
- EIOPA. (2024a). *Consumer Trends Report 2024*. https://www.eiopa.europa.eu/publications/consumer-trends-report-2024_en
- EIOPA. (2024b). *Financial stability report*. https://www.eiopa.europa.eu/publications/financial-stability-report-december-2024_en
- Financial Ombudsman. (2016). *Ubezpieczenie na życie z ubezpieczeniowym funduszem kapitałowym. Część II*. https://rf.gov.pl/wp-content/uploads/2020/05/UFK_report_2016.pdf
- Funds Compensa. (n.d.). <https://www.compensa.pl/fundusze/>
- Fund Listings. (n.d.). <https://viennialife.pl/strefainwestowania/notowania-funduszy>

- Goetzmann, W., & Ingersoll, J. (2006). Portfolio performance manipulation and manipulation-proof performance measures. *The Review of Financial Studies*, 20(5), 1503–1546.
- Harrison, G.W. (2019). Behavioral insurance and economic theory: A literature review. *Risk Management and Insurance Review*, 22(2), 133–182. <https://doi.org/10.1111/rmir.12119>
- Homa, M. (2022). The impact of MT strategies on risk and value distribution of unit-linked insurance portfolios. *European Research Studies Journal*, 25(3), 607–619.
- Hu, M., Chang, R., Sui, X., & Gao, M. (2024). Attention biases the process of risky decision-making: Evidence from eye-tracking. *PsyCh Journal*, 13(2), 157–165. <https://doi.org/10.1002/pchj.724>
- Insurance Ombudsman. (2012). *Ubezpieczenia na życie z ubezpieczeniowym funduszem kapitałowym*. https://www.senat.gov.pl/gfx/senat/userfiles/_public/k9/komisje/2018/kpcpp/materiały/258/p92617/rzf_rap1.pdf
- Just, R.E., Hueth, D.L., & Schmitz, A. (2004). *The Welfare Economics of Public Policy. A Practical Approach to Project and Policy Evaluation*. Edward Elgar.
- KNF. (2022). *Stanowisko Urzędu Komisji Nadzoru Finansowego dotyczące sposobu prezentowania opłat w umowach ubezpieczenia na życie z ubezpieczeniowym funduszem kapitałowym*.
- KNF. (2023). *Sprawozdanie z działalności Urzędu Komisji Nadzoru Finansowego oraz Komisji Nadzoru Finansowego w 2022 roku*. https://www.knf.gov.pl/?articleId=82835&p_id=18
- KNF. (2024). *Sprawozdanie z działalności Urzędu Komisji Nadzoru Finansowego oraz Komisji Nadzoru Finansowego w 2023 roku*. https://www.knf.gov.pl/publikacje_i_opracowania/sprawozdania?articleId=89933&p_id=18
- Kowalczyk-Rólczyńska, P., & Pisarewicz, P. (2015). Unit-linked life insurance in view of the new Act on insurance and reinsurance activities. *Wiadomości Ubezpieczeniowe*, 4, 39–51.
- Lisiak, E., & Małek, M. (2024). *Polska w liczbach 2024*. https://stat.gov.pl/files/gfx/portalinformacyjny/pl/defaultaktualnosci/5501/14/17/1/polska_w_liczbach_2024_pl_pi.pdf
- Lisowski, J. (2015). Opłaty likwidacyjne w ubezpieczeniach na życie z funduszem kapitałowym. Funkcje i przesłanki. In J. Monkiewicz & M. Orlicki (Eds.), *Ochrona konsumentów na rynku ubezpieczeniowym w Polsce. Współczesne wyzwania* (pp. 131–148). Poltext.
- Łańcucki, J. (2017). Interwencja produktowa jako instrument ochrony konsumentów w sektorze ubezpieczeń. In I. Kwiecień (Ed.), *Ubezpieczenia we współczesnym świecie. Problemy i tendencje*. Wydawnictwo Uniwersytetu Ekonomicznego we Wrocławiu.
- Mrozowska-Bartkiewicz, B. (2019). Instytucja interwencji produktowej w Europejskim Systemie Nadzoru Finansowego. *Prawo Asekuracyjne*, 1, 42–54. <https://doi.org/10.5604/01.3001.0013.5645>
- Obligacje Skarbowe. (n.d.). *Tabele odsetkowe*. <https://www.obligacjeskarbowe.pl/tabela-odsetkowa/>
- Opinion of the European Insurance and Occupational Pensions Authority on the proposed product intervention measure of Komisja Nadzoru Finansowego of Poland*. (Testimony of EIOPA, 2021). https://www.eiopa.europa.eu/document/download/1035bfb5-2db8-40e0-b328-734ce9f61d8f_en?filename=Opinion of the European Insurance and Occupational Pensions Authority on the proposed product intervention measure of Komisja Nadzoru Finansowego of Poland.pdf
- Orquin, J.L., Perkovic, S., & Grunert, K.G. (2018). Visual biases in decision making. *Applied Economic Perspectives and Policy*, 40(4), 523–537. <https://doi.org/10.1093/aep/pyp020>
- Ostrowska-Dankiewicz, A. (2015). The research on the effectiveness of unit-linked insurance plans. *Wiadomości Ubezpieczeniowe*, 4, 53–62.
- Paduszyńska, M. (2019). Misselling jako nadużywanie zaufania klienta na rynku finansowym. *Annales. Ethics in Economic Life*, 22(3), 45–60. <https://doi.org/10.18778/1899-2226.22.3.04>
- Polish Insurance Association (PIU). (2024). *PIU Annual Report 2023*. <https://piu.org.pl/raport-roczny-piu/>
- Romanowski, M., & Romanowski, G. (2014). Kilka refleksji w sprawie opłaty likwidacyjnej w umowie ubezpieczenia na życie z ubezpieczeniowym funduszem kapitałowym. *Wiadomości Ubezpieczeniowe*, 1, 33–44.
- Rothschild, M., & Stiglitz, J. (1976). Equilibrium in competitive insurance markets: An essay on the economics of imperfect information. *The Quarterly Journal of Economics*, 90(4), 629–649.

- Rutkowska-Tomaszewska, E., & Zwaliński, A. (2023). Przegląd decyzji Prezesa UOKiK w sprawach antykonsumenckich praktyk rynkowych dotyczących usług finansowych wydanych w 2023 roku. *Internetowy Kwartalnik Antymonopolowy i Regulacyjny*, 7(12), 72–104.
<https://doi.org/10.7172/2299-5749.IKAR.7.12.6>
- Simon, H.A. (1990). Invariants of human behaviour. *Annual Review of Psychology*, 41, 1–19.
<https://doi.org/10.1146/annurev.ps.41.020190.000245>
- Stiglitz, J.E. (2000). *Economics of the Public Sector*. W.W. Norton.
- Szaraniec, M. (2021). Zakaz dystrybucji niektórych umów ubezpieczenia na życie z UFK jako nadzorcza interwencja produktowa KNF. *Prawo Asekuracyjne*, 109(4), 26–44.
<https://doi.org/10.5604/01.3001.0015.6035>
- Szczepańska, M. (2012). Charakterystyka prawna opłaty likwidacyjnej pobieranej przez ubezpieczycieli w umowie ubezpieczenia na życie z ubezpieczeniowym funduszem kapitałowym. *Wiadomości Ubezpieczeniowe*, 1, 3–11.
- Szczepańska, M. (2017). Art. 26. In P. Wajda (Ed.), *Ustawa o działalności ubezpieczeniowej i reasekuracyjnej. Komentarz*. <https://sip-lex-1pl-10000d64y007d.han3.ue.poznan.pl/#/commentary/587723169/520609/szczepanska-magdalena-red-wajda-pawel-red-ustawa-o-dzialalnosci-ubezpieczeniowej-i...?cm=URELATIONS>
- UFK Listings. (n.d.). <https://www.pzu.pl/dla-ciebie-i-rodziny/inwestycje-i-oszczednosci/y/notowania-ufk>
- Wajda, P. (2021). Interwencja produktowa Komisji Nadzoru Finansowego z art. 17 ust. 1 Rozporządzenia 1286/2014 – wybrane aspekty proceduralno-prawne. *Wiadomości Ubezpieczeniowe*, 4, 3–22.
<https://doi.org/10.33995/wu2021.4.1>
- Wisniewski, M. (2012). Wartość wykupu polis życiowych z Ubezpieczeniowym Funduszem Kapitałowym. *Wiadomości Ubezpieczeniowe*, 2, 29–44.
- Wisniewski, M. (2016). Ubezpieczenia o charakterze oszczędnościowym w świetle nowych regulacji. *Wiadomości Ubezpieczeniowe*, 3, 67–80.
- Zamojska, A. (2012). *Efektywność funduszy inwestycyjnych w Polsce. Studium teoretyczno-empiryczne*. C.H. Beck.
- Zorski-Sikora, Ł., Bojanowska-Sosnowska, A., Braniewicz, O., & Wejt-Knyżewska, A. (2023). *Świadomość finansowa Polaków*. https://rf.gov.pl/wp-content/uploads/2024/04/Raport_RF-Swiadomosc_finansowa_Polakow.pdf