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Cost of Active Management in Polish Investment Funds*

Koszt aktywnego zarządzania funduszami inwestycyjnymi w Polsce

Abstract

The article presents a study on the costs of active management based on five different measures: the active expense ratio, the active fee, the new active fee, the active to passive fee, and the maximum acceptable fee (MAF) ratio. There are two main objectives of the article. The first one is to indicate which measure is best in estimating the costs of active management. The second one is to check whether the costs incurred are related to the value added for investors. In the study, 34 Polish equity mutual funds are evaluated. Based on the obtained results, it can be concluded that two measures, the active to passive ratio and the MAF ratio, provide the most practical information. What's more, active management does not generate any excess returns. On the contrary, a reduction can be observed.

Keywords:
active share, investment funds, mutual funds, closet indexing, active portfolio management

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Streszczenie

W artykule przedstawiono badanie poziomu kosztów aktywnego zarządzania oparte na pięciu miarach oceny tych kosztów (*active expense ratio*, *active fee*, *new active fee*, *active to passive* i MAF). W badaniu przyjęto dwa cele. Pierwszym z nich było sprawdzenie, która z miar dostarcza najwięcej informacji przydatnych w ocenie efektów decyzji zarządzających funduszami. Drugim było sprawdzenie, czy koszt aktywnego zarządzania generuje wartość dodaną dla inwestorów w postaci dodatkowej stopy zwrotu. Badania przeprowadzono na próbie 34 polskich funduszy akcyjnych. Na podstawie uzyskanych wyników można wskazać dwie miary, które dostarczają najwięcej przydatnych informacji – *active to passive* i wskaźnik MAF. Ponadto aktywne zarządzanie funduszami nie generuje dodatkowej stopy zwrotu, a wręcz przeciwnie – powoduje obniżenie stóp zwrotu.

Słowa kluczowe:
aktywne zarządzanie, fundusze inwestycyjne, ukryte indeksowanie, aktywne zarządzanie portfelem inwestycyjnym

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Introduction

In the literature and practice of investment funds, it is assumed that investment funds can be managed either passively or actively. Passive management of a portfolio of funds follows the adopted benchmark, most often a stock index. However, with active management, it is assumed that the managers periodically change the composition of the investment portfolio. In a nutshell, it can be said that active management consists of a periodic replacement of assets included in the investment fund's portfolio. Many measures can be used to determine the level of managerial activity in investment fund management. The most common measure is the tracking error. Based on the results for this measure, it is possible to assess, approximately, the level of management activity. On the other hand, it cannot be clearly stated whether the fund is managed actively or passively.

One measure that makes it possible to define the method of managing investment funds was proposed by **Cremer and Petajisto [2009]**. In 2009, Cremers & Petajisto published the results of their analyses to determine the level of activity of managers in managing the investment fund's portfolio. For this purpose, they proposed the so-called active share ratio, which compares the share of an investment fund's investments with the composition of the benchmark. The active share ratio indicates what part of the portfolio differs from the benchmark and makes it possible to identify passively managed funds despite declarations of active management (the so-called closet indexers). Next, the authors used the active share measure to check whether there was a relationship between the value of the active share and the investment funds' performance. Based on the results of the analyses, the authors concluded that such a relationship existed. Actively managed equity funds investing in the US market achieved performance above the benchmark. Similar conclusions from the conducted research were obtained, among others, by **Petajisto [2013]**, **Frijns and Indrawian [2018]**, and **Milan and Althaus Junior [2019]**. In turn, **Jin et al. [2020]** showed that high levels of the active share ratio were associated with low performance and an increased level of risk.

Cremers and Pareek [2016] used the active share indicator to test if this measure could be useful in predicting whether managers will beat the benchmark. The authors indicated that this was possible when combining high active share values and holding shares in the portfolio for two years. However, **Ang et al. [2017]** and **Coetzee et al. [2018]** obtained the opposite results, i.e., they showed no dependence between the active share and performance.

Moreover, **Huang et al. [2011]** demonstrated that the value of the active share was sensitive to changes in the level of investment risk taken by managers. **Cremers et al. [2016]** focused on the relationship between passive and active investing. Using mutual funds from 32 countries, they found that in markets where actively managed funds faced competition from exchange-traded funds (ETFs), their managers were more active, and the funds charged lower fees. Furthermore, **Miziołek [2015]** focused on checking the level of fund management activity. The main conclusion from the research was that most of the studied funds were managed quite passively with relatively high management costs. To sum up, most of the conducted research based on the active share measure aimed to clarify the relationship between the activity of managers and the assessment of their ability to select assets. For this purpose, a set of variables related to the fundamental characteristics of the funds was used, such as net asset value, the number of managers, capital inflow, and fund age.

In other studies, the focus was on finding out how much active management of an investment fund costs. In 2007, **Miller [2007]** proposed a method for calculating the active expense ratio that boils down to estimating the costs broken down into actively and passively managed parts of fund portfolios. Based on the conducted analysis, **Miller [2007]** showed that passively managed funds prevailed in the studied group of funds, and active management resulted in a drop in performance. The cost of active management was estimated at 5.20%. Similar results were obtained by **Coetzee, de Villiers and Nel [2018]** for funds from southern Africa. The active management cost ratio was 3.85% for all funds and 3.99% for closet indexers. In this case, active management also resulted in lower fund performance.

Cremers and Quinn [2016] calculated the costs of active management using a new indicator. They introduced an "active fee," which measures how much investors pay for the proportion of the fund different from the benchmark index. They noticed that funds were relatively expensive. They found that combining a low active share and a high active fee was connected with poor performance. The basis of these ratios are all incurred costs related to the implemented investment strategy. These costs also include indirect costs such as transaction costs and fees. From the level of cost assessment, this is the correct approach that considers the non-impact of the amount of management fee costs. This aspect is particularly important when considering the measures currently under way to introduce maximum remuneration rates for the management of funds in the European Union. The downside of the active expense ratio and the active fee is that they are absolute measures. Not only should they be compared to the results of other funds but also with the value of the active share. Therefore, the main aim of the research is to indicate other measures that can be used in estimating the costs of active management. It will be helpful to answer the following research question: Which measure of active management costs provides the most practical information? At the same time, for practical reasons, a ranking will be made to identify investment funds with the lowest and highest costs of active management.

Using the costs of active fund management, it is also possible to check whether the costs incurred are related to the value-added for investors generated by the managers. In investment funds, such an added value may be additional performance, determined by the amount of active α. Bearing this in mind, an additional research question was formulated: Does active management of investment funds generate additional performance?

The conducted research broadens the current state of knowledge in two ways. First, the results of the analyses confirm the legitimacy of using various measures of the costs of active management of investment funds. Of the proposed three new measures, extended research requires two measures that have been shown to generate results with practical application. It has also been shown that active management of investment funds does not generate additional performance expressed in the active form α.

The research method is presented in the further part of the article, and the research group is characterised. The results of the analyses and conclusions are presented below. The article ends with a summary.

Material and methods

Active share and active alpha

The simplified formula introduced by Cremers [2017] was used to calculate the active share ratio:

$$active\ share = 100\% - \sum_{i=1}^{N} \min\left(w_{fund}, w_{benchmark}\right) xd\left[w_{fund} > 0\right], \tag{1}$$

where N is the number of equities in the mutual fund's portfolio, w_{fund} is the weight of the fund in stock, $w_{benchmark}$ is the weight of the benchmark in stock i, $d[w_{fund} > 0]$ is an indicator variable equal to 1 for all positions where the fund is positive (i.e., not short) and is zero otherwise.

As can be seen from the presented formula, the active share ratio determines the level of similarity in the composition of the benchmark and the investment fund portfolio. A value of 100% means that the fund is fully actively managed. It can also mean a poor match of the benchmark. On the other hand, a value of 0% means an exact duplication of the benchmark composition and confirms the lack of active management of the fund. In practice, the active share values fall between these values. In the first stage of the study, the active share values for each fund were estimated. The same benchmark was adopted for all funds, the WIG index. The choice of this index resulted from the fact that most funds used it as a reference standard (for more information, see the research sample section). Funds were divided into three groups according to Cremers' and Petajist's proposition: funds with active shares below 20% should be treated as pure index funds, with an active share between 20% and 60% as closet indexer funds (funds using hidden benchmark mapping) and with an active share under 60% as actively managed funds.

In the second step, the value of the active alpha was estimated according to the method proposed by **Miller** [**2007**]. According to this method, the alpha index consists of the alpha for the actively managed part of the portfolio and the alpha for the passively managed part. The active alpha is determined from the following formula:

$$\alpha_{iA} = \alpha_i + \frac{R\left(\alpha_i + C_B\right)}{\sqrt{1-R^2}}, \tag{2}$$

where α_{iA} is active alpha, α_i – mutual fund alpha, R^2 – correlation coefficient, C_B – expense costs ratio.

As Gurwitz [2021] notes, the active alpha is related to the measure of the active share and the skills of fund managers. The amount of the active alpha shows that additional performance was generated. The active alpha was used to determine whether active fund management was associated with generating additional performance.

The cost of active management

Five measures were used to calculate the cost of active fund management. Two of them are presented in the literature, and three are new.

The first one is **Miller's** [**2007**] active expense ratio. This measure is based on estimating the cost of active management versus passive management of index funds. The active management cost ratio (active expense ratio) is calculated according to the formula:

$$C_A = C_i + \frac{R\left(C_i - C_B\right)}{\sqrt{1-R^2}}, \tag{3}$$

where C_A – the active expensive ratio, C_i – the expense ratio for the mutual fund, R^2 – correlation coefficient, C_B – the expense ratio for the passively managed fund.

The second measure is Cremers' and **Quinn's** [**2016**] active fee:

$$Active\ \ fee = \frac{expense\ \ ratio - \left(1 - active\ \ share\right) * index\ \ fund\ \ fee}{active\ \ share}, \tag{4}$$

where the index fund fee is the typical expense ratio charged by index funds.

The structure of this indicator is similar to the active expense ratio. This measure is based on the cost of active management, defined as the difference between the expense ratio and the management costs of index funds. The benchmark is the active share measure, i.e., the quantified level of active management of the fund.

As the two measures presented above are based on total costs, it is reasonable to consider other aspects of active management. The starting point is the active fee, in which the approach to costs has been modified.

In the first place, attention was paid to the actual costs of active management. This part of the costs was calculated by reducing the total costs by the management costs. The result was then compared to the active share value. As a result, a new indicator was obtained – the new active fee, which is expressed in the following formula:

$$New\ active\ fee = (expense\ ratio - management\ fee)/active\ share. \tag{5}$$

In contrast to the active expense ratio and active fee, the reference point in the new active fee is the cost of servicing active fund management, i.e., primarily transaction costs and other costs related to changes in the components of the fund's investment portfolio. The limitation of this measure is that it takes into account total costs, which means it is not sensitive to the amount of remuneration costs for fund management. The new active fee introduces the amount of fund management, which may be important when there are large discrepancies in management costs between funds. This measure is a relative measure. The obtained result for a given fund should be compared to the results of other funds and can be interpreted as follows: the lower the value, the lower the cost of active management.

Another indicator, the "active to passive fee," compares the costs of active management to the costs of passive management. The basis of this ratio is the comparison of the costs of active management of a part of the fund's investment portfolio to the costs of passive management, which is equal to the costs of managing an index fund:

$$Active\ to\ pasive\ fee = \frac{expense\ ratio - \left(1 - active\ share\right) * index\ fund\ fee}{index\ fund\ fee}. \tag{6}$$

This measure is absolute, and its amount determines how many times the cost of active management is higher than the cost of passive management. The lower the value, the lower the costs of active management in relation to the costs of passive management.

The last measure is the maximum acceptable fee (MAF) ratio, in which the assessment of active management costs is compared to the maximum cost level accepted by the investor. This indicator is calculated according to the following formula:

$$MAF = (expense\ ratio - MAF)/active\ share. \tag{7}$$

The MAF ratio is the maximum cost level set by the investor. It covers both the costs of active management and the costs of passive management of a part of the portfolio. Therefore, the optimal situation in this ratio is to minimise the difference between the expense ratio and the MAF. Optionally, the active share value should be maximised (interpretation of the results: the higher the value, the higher the cost of active management). The main advantage of this measure is that it can be used as an absolute measure, combined with the possibility for the investor to choose the level of costs, and the possibility of comparing it with the results of other funds.

Research sample

The justification for using selected measures of active management costs was carried out on a sample of 34 investment funds that met the following conditions: they were open-ended funds that operated for at least three years in the period from June 2017 to December 2020; the investment strategies were based on investing in the equity of domestic companies; and they were equity universal. Mutual funds investing at least 66% of the net asset value in shares were selected for the research sample. The performance, costs, and investment portfolio components were taken from semi-annual and annual financial statements. The quotations of stock exchange indices were obtained from publications by the Warsaw Stock Exchange.

The WIG index was adopted as a benchmark for all funds. Some funds adopted other indices – WIG20 and mWIG40. Based on the results of active share estimation for the WIG20 and mWIG40 indices, they do not differ significantly from the results for the WIG index. Therefore, the WIG index, the basic index of the Warsaw Stock Exchange and the broad market index, was adopted as the benchmark for all the funds.

Results and discussion

Active management

The average value of the active share ratio for all funds is 46%. This means that the average Polish equity fund is managed quite passively (Table 1). The obtained result does not differ from the results presented by other researchers [**Coetzee et al., 2018**; **Frijins, Indriawian, 2018**]. Compared to the results obtained for the US market [**Cremers, 2017**; **Jin et al., 2020**], for which the average active share value is above 80%, such a result was found in only one fund among the surveyed ones. Considering the styles of active management proposed by **Cremers and Petajisto [2009]**, in the analysed group of funds, it is possible to distinguish one pure index funds (3% of all surveyed funds), 28 closet indexer funds (funds using hidden benchmark map-

ping; 82%) and five actively managed funds (15%). The average active share value is 16% for pure index funds, 41% for closet indexer funds, and 72% for actively managed funds. To compare, **Miziołek [2015]** obtained an active share value of 43% and not a single pure index fund, 41 closet indexer funds (87% of the total sample), and six actively managed funds (13%). **Miziołek [2015]** also noted that eight funds had an active share ratio ranging from 20% to 30%, which is quite low and similar to index funds. In this group of funds, there are only two funds in this range. The average value of the active share for one fund is 21%, and for the other fund it is almost 30%. Meanwhile, the highest average value of the active share was 86%. Comparing the results of these analyses to the results of the research by **Miziołek [2015]**, it can be concluded that there have been no significant changes in managing equity funds. Still, most of the funds should be assigned to the closet indexer funds, i.e., funds that use hidden indexing of the stock index.

Table 1. The values of the active share and active alpha ratios for the surveyed funds in the 2017–2020 period

Id fund / name	Classification	Active share (%)	Min. active share (%)	Max. active share (%)	Average active α (%)
DWS004 Investor Akcji	actively managed fund	86	83	91	–0.07
QRS003 QUERCUS Agresywny	actively managed fund	73	64	77	–0.05
DWS003 Investor Akcji Spółek Dywidendowych	actively managed fund	69	63	78	–0.05
AGI0003 AGIO Agresywny Spółek Wzrostowych	actively managed fund	67	47	87	–0.002
PIO050 Pekao Akcji – Aktywna Selekcja	actively managed fund	63	39	75	–0.14
SEB003 Novo Fio Akcji	closet indexer fund	56	47	62	–0.09
NOB003 Noble Fund Akcji Polskich	closet indexer fund	55	40	80	–0.13
BPH002 Rockbridge Subfundusz Akcji	closet indexer fund	55	39	65	–0.14
UI_019 Generali Akcje Wzrostu	closet indexer fund	54	50	63	–0.17
SKA007 Subfundusz Skarbiec – Akcja	closet indexer fund	53	35	64	–0.03
PZU001 PZU Akcji KRAKOWIAK	closet indexer fund	53	35	72	–0.12
BPS007 BPS Momentum Akcji	closet indexer fund	52	45	60	–0.14
LMI001 Esaliens Parasol FIO Subfundusz Akcji	closet indexer fund	51	30	78	–0.24
KBC026 GAMMA Akcyjny	closet indexer fund	51	46	54	–0.22
BZW013 Credit Agricole Akcyjny	closet indexer fund	47	36	64	–0.15
AIG013 MetLife Subfundusz Akcji Polskich	closet indexer fund	46	37	55	–0.40
PKO021 PKO Akcji Plus	closet indexer fund	45	35	64	–0.12
AGI0044 AGIO AKCJI PLUS	closet indexer fund	43	22	64	–0.01
BZW021 Santander Prestiż Akcji Polskich	closet indexer fund	43	32	56	–0.24
AIP003 Aviva Investors Polskich Akcji	closet indexer fund	42	31	58	–0.28
UI_005 Generali Korona Akcje	closet indexer fund	41	38	45	–0.15
AXA001 AXA FIO Subfundusz Selektywny Akcji Polskich	closet indexer fund	41	37	48	–0.30
ALL014 Subfundusz Allianz Selektywny	closet indexer fund	40	27	63	–0.43
BPS004 BPS Akcji	closet indexer fund	38	26	91	–0.18
IPO062 Subfundusz IPOPEMA AKCJI	closet indexer fund	38	32	51	–0.14
AXA002 AXA FIO Subfundusz Akcji	closet indexer fund	37	26	48	–0.10
PIO003 Pekao Akcji Polskich	closet indexer fund	36	29	52	–0.40
MIL001 Millennium FIO S Akcji	closet indexer fund	36	32	43	–0.20
ING001 NN Akcji	closet indexer fund	33	24	45	–0.62
BZW001 Santander Akcji Polskich	closet indexer fund	32	27	40	–0.42
AIG004 MetLife Subfundusz Akcji	closet indexer fund	32	26	38	–0.02
AIP012 Aviva Investors Akcyjny	closet indexer fund	31	25	37	–0.63
FOR013 BNP Paribas FIO – Subfundusz BNP Paribas Dynamicznego Inwestowania	closet indexer fund	29	22	36	–0.43

Id fund / name	Classification	Active share (%)	Min. active share (%)	Max. active share (%)	Average active α (%)
ING007 NN FIO Indeks Odpowiedzialnego Inwestowania	pure index fund	16	14	19	–0.42
All		46	17	86	–0.24
Actively managed funds		72	60	91	–0,09
Closet indexer funds		41	22	60	–0,26
Pure index fund		16	14	19	–0,42

Source: Author's own calculation.

The value of the average active alpha for each of the analysed funds is below zero. In either case, the active alpha lowers the fund's performance. Interestingly, the index fund's lowest result of –0.42% was recorded for the fund with an active share of 16%, while the highest result of –0.002% was for one with an active share of 67%. After dividing the funds into three groups according to the active share value, it is possible to see an increase in the value of the active alpha. For pure index funds (active share up to 20%), the average active alpha is –0.42%, for closet indexer funds (active share in the range from 20% to 60%), the average value of the active alpha is –0.26%, and for actively managed funds (active share above 60%) the active alpha is –0.09%.

Active management and costs

In the second part of the study, the cost of active management was determined. For this purpose, five measures were used. The common feature of these measures is the division of costs into costs incurred for active management and those for passive management. The difference is in the approach to costs incurred under active management and the reference base. Regardless of the measure chosen, based on the average values for all funds, it should be concluded that active management is expensive (Table 2). The obtained results are consistent with those obtained for other markets [**Coetzee et al., 2018**; **Cremers, Quinn, 2016**; **Miller, 2007**], but they are much higher for Polish funds. The main reason for the discrepancy in this respect is higher levels of the expense ratio for Polish funds.

The results of the $\chi 2$ independence test show a relationship between the level of active management and the level of incurred costs. No such relationship was observed for only one measure – the new active fee. Additionally, no statistically significant Spearman rank correlation values were obtained for this measure. This can be explained in two ways. First, the research sample is too small. Second, there is no correlation between the transaction costs and the level of active management.

Table 2. Selected statistics for active management cost indicators

Variables	Active expense ratio (%)	Active fee (%)	New active fee (%)	Active to passive fee	MAF ratio (%)
Average (2017–2020)	18.70	7.52	0.85	8.34	–0.76
Median	17.00	7.21	0.45	8.52	0.11
Min	–2.58	–2.12	0.00	–0.78	–28.03
Max	57.07	19.40	9.39	33.96	11.44
Spearman correlation	–0.24 (p value 0.0000)	–0.33 (p value 0.0000)	–0.08 (p value 0.1975)	0.27 (p value 0.0000)	0.18 (p value 0.0021)
Test χ^2	67.81***	124.78***	11.94	23.25***	28.06***
C-Pearson	0.44	0.56	0.20	0.28	0.30

Index fee equals 0.4%, i.e., the lowest ETF management fee with exposure to the Polish market. For the MAF ratio, the maximum acceptable fee was assumed at the level of the average cost value for all the funds (3.55%).
*** p-value = 0.0000.

Source: Author's own calculation.

For the remaining indicators, the Spearman rank correlation is at a similar and significantly low level. The highest level of the correlation was obtained for the active fee (–0.33) and the active to passive fee (0.27). Meanwhile, the C-Pearson coefficient obtains the highest values for the active fee (0.56) and the active expense ratio (0.44).

Table 3 shows the average values for the funds, divided according to the style of active management. As expected, the lowest values were obtained for the pure indexer fund (active share below 20%). This fund has the lowest costs of all the surveyed funds and the lowest active share values. The results obtained for closet indexer and active funds are somewhat surprising. The average values of the three measures (active expense ratio, active fee, and new active fee) for closet indexer funds (active share in the range from 20% to 60%) reveal higher costs of active management than in the case of actively managed funds (active share above 60%). On the other hand, the values of the active to passive fee and the MAF ratio are reverse.

Table 3. The average cost of active management split by active management styles

Active share	Active expense ratio (%)	Active fee (%)	New active fee (%)	Active to passive fee	MAF ratio (%)	Average total costs – management fee (%)	Average management fee (%)
Pure indexer	2.72	3.06	0.17	1.23	–16.89	0.02	0.80
Closet indexer	20.55	8.14	0.92	7.93	–0.52	0.37	3.04
Active	13.83	5.99	0.62	10.97	1.15	0.46	4.05
All	18.91	7.63	0.85	8.46	–0.42	0.36	3.22

Source: Author's own calculation.

To apply a certain simplification, it has been assumed that the higher the level of active management of funds, the higher the costs should be. This is confirmed by the average values of total costs, fewer remuneration costs, and the average amount of remuneration costs. These costs increase with the growth of the active share.

When looking at the values of active management cost indicators for individual funds (Table 4), it is worth paying attention to the difficulty in interpreting the results for individual measures. The results obtained for the active expense ratio and active fee are numerical values that indirectly present the costs incurred. In turn, the new active fee measure provides information about the transaction costs and does not include management costs, which may affect the order of funds in the ranking. Two other measures, the active to passive fee and the MAF ratio, provide the most practical information. The active to passive fee by direct comparison to the costs of passive management allows reducing the costs of all funds to a common denominator. Choosing the cheapest fund is simple and intuitive – the lower the value, the lower the costs of active management. The last indicator, the MAF ratio, provides information about the level of costs based on the conditions set by the investor.

Table 4. Values of active share, active α, and cost measures for the analysed funds

Fund	Active share (%)	Active α (%)	Active expense ratio (%)	Active fee (%)	New active fee (%)	Active to passive fee	MAF ratio (%)
DWS004	86	–0.07	21.69	10.47	0.40	22.36	6.40
QRS003	73	–0.05	8.05	4.54	0.31	8.30	–0.18
DWS003	69	–0.05	8.73	4.84	0.42	8.29	–0.16
AGI003	67	0.00	8.72	8.97	3.53	14.25	3.62
PIO050	63	–0.14	17.49	5.69	0.19	8.39	–0.02
SEB003	56	–0.09	9.01	7.34	1.15	10.25	1.29
NOB003	55	–0.13	20.12	6.85	0.28	9.03	0.52
BPH002	55	–0.14	17.99	6.84	0.74	9.02	0.56
UI_019	54	–0.17	7.34	6.08	0.47	8.17	–0.15
SKA007	53	–0.03	19.96	8.98	0.60	12.07	2.51

Fund	Active share (%)	Active α (%)	Active expense ratio (%)	Active fee (%)	New active fee (%)	Active to passive fee	MAF ratio (%)
PZU001	53	–0.12	5.34	2.31	0.19	2.97	–4.45
BPS007	52	–0.13	9.60	3.68	1.69	4.76	–2.83
LMI001	51	–0.24	11.36	5.66	0.26	6.87	–1.30
KBC026	51	–0.22	27.42	7.10	1.33	9.01	0.46
BZW013	47	–0.15	18.90	6.44	0.37	7.27	–0.99
AIG013	46	–0.40	11.81	6.99	0.90	7.89	–0.29
PKO021	45	–0.27	20.16	6.66	0.20	7.46	–0.89
AGI044	43	–0.01	28.19	12.76	2.98	12.05	3.81
BZW021	43	–0.24	17.31	6.74	0.10	7.02	–1.23
AIP003	42	–0.28	21.77	9.00	0.37	8.95	0.73
UI_005	41	–0.15	8.02	8.44	0.28	8.66	0.38
AXA001	41	–0.30	34.64	9.06	0.59	9.26	0.95
ALL014	40	–0.43	23.85	9.49	0.43	8.65	0.65
BPS004	38	–0.18	30.97	10.82	0.59	8.48	0.61
IPO062	38	–0.14	36.09	11.95	5.24	11.09	3.02
AXA002	37	–0.10	21.44	9.99	0.65	9.00	0.79
PIO003	36	–0.40	29.65	9.51	0.25	8.15	0.05
MIL001	36	–0.20	26.26	10.35	0.86	9.19	1.09
ING001	33	–0.62	25.27	8.79	0.56	6.87	–1.56
BZW001	32	–0.42	32.98	10.04	0.19	8.06	–0.22
AIG004	32	–0.02	13.94	8.33	0.70	6.67	–1.96
AIP012	31	–0.63	–0.32	0.17	0.43	0.15	–10.67
FOR013	29	–0.43	48.46	12.73	1.47	9.10	1.34
ING007	21	–0.28	2.07	2.69	0.26	1.35	–13.66

Source: Author's own calculation.

Conclusions

The main aim of the research was to check the validity of using five measures to assess the costs of active management. The goal was achieved by checking which of the active management cost measures provides the most practical information. It can be concluded that the best measures for assessing the costs of active management are the active to passive fee and the MAF ratio. Compared to other measures, these are characterised by easy-to-interpret results and are easy to implement.

An additional goal was to check whether the costs incurred are related to generating additional performance, determined by the amount of active α. Based on the obtained results, it can be concluded that active management of investment funds does not generate additional performance. On the contrary, it brings about a reduction in performance.

The limitation of the research was the size of the research sample. Therefore, future research should be carried out on a larger sample and investment funds from different countries. The relationship between active α and performance also requires further analysis.

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