MS15/2.3: Annex 5

Market Study

Asset Management Market Study

Final Report: Annex 5 – Assessment of third party datasets

June 2017

Annex 5: Assessment of third party datasets

Introduction

1. Asset managers frequently present the performance of investment products against benchmarks in marketing materials. Investors also commonly examine product performance relative to benchmarks when choosing products and/or monitoring their investment portfolios. In addition, analysts often calculate the performance of investment managers in different segments, and in doing so rely on third party databases of product returns. To the extent that benchmarks can be gamed by managers, or third party databases are biased in some respect, the decisions of UK investors could be distorted in favour of particular products or segments, and performance analyses which do not adjust for these features could be inaccurate.

2. As an example, the interim report contained an analysis of the average performance, against Morningstar category benchmarks, of open-ended funds across a range of asset classes (see chapter 6 to the interim report). If the underlying database of manager performance used in this analysis was biased, and/or if managers could have gamed the benchmarks against which this performance was compared, there is a risk that our manager performance estimates could be upwardly biased.

3. Similarly, the interim report contained an analysis of the performance of investment consultants' manager ratings. This showed that both highly rated managers (aggregated across our sample of consultants) and non-highly rated managers outperformed their benchmarks (see annex 6 to the interim report).

4. We consider it is important to establish whether these results, and others which rely on the same data, are genuine or whether factors such as survivorship bias, tax assumptions and benchmark gaming could instead be behind the findings. In this annex we have focused on whether the performance analyses in the interim report could have been upwardly biased. Therefore, we have examined only the third party databases we used to generate results at the interim report stage. We have also limited our investigation to those factors which could have affected the analyses presented in the interim report, and as such this annex does not present an exhaustive assessment of third party databases or scope for gaming.

5. Specifically, we have examined whether the Morningstar Direct or eVestment databases are biased, whether Morningstar category benchmarks or eVestment's manager-specified benchmarks could be gamed by managers, and whether the tax assumptions made by index administrators lead to funds showing inflated performance when compared to benchmark indices.

6. In the remainder of this annex we explore six areas which have the potential to affect the performance analyses presented in the interim report. These areas are:
    - Survivorship bias in third party databases.

- Backfill bias in third party databases.
- Simulated returns in third party databases.
- Zero or low access products in third party databases.
- Benchmark gaming by fund managers.
- The implications of tax assumptions on index returns.

Survivorship bias in third party databases

7. Annex 6 to the interim report discussed the possibility that third party databases could in theory be subject to survivorship bias, in that only surviving products are present in the dataset. This could lead to average sector returns that are overstated compared to actual returns for the full population.

8. There are two main ways in which survivorship bias could be within the performance recorded in third party datasets:
   - Data only covers strategies which are still in existence.
   - Poorly performing strategies stop reporting to the database.

9. On the first point both Morningstar and eVestment have stated that their databases are survivorship bias free. Firms cannot request that funds or their performance data be removed once that data has been submitted, either for on-going or obsolete funds. We confirm that the data used for our analyses from these data providers contained both surviving products, as well as closed or merged products.

10. We consider the second point is also unlikely. The interim report set out mechanisms which are likely to constrain this behaviour, such as the ramifications missing data might have on recommendations, ratings and ultimately fund flows. IA members are required to submit information on retail funds to Morningstar on an on-going basis. Morningstar has indicated that cessation of fund performance reporting was rarely due to performance issues and was usually followed up and rectified if applicable.

11. In addition, Annex 6 to the interim report found very few instances where managers report information, stop reporting it for a period, and then start again. Out of the 43,098 products we have examined in eVestment's database, this feature occurs for just 124 of them (0.29%). We have therefore ruled out the possibility that institutional fund managers temporarily cease reporting bad performance. For the data examined in Morningstar Direct we also see a very low proportion of share classes which contain gaps in their reporting of returns over time. We found that out of all share classes examined only 135 had any periods of missing net return figures (0.59%).

12. We therefore conclude that these two databases are unlikely to be affected by survivorship bias.

Backfill bias and simulated returns

13. Backfill bias refers to inaccuracies in a database of returns caused by some fund managers choosing not to report performance to a database from a fund's inception, but instead choosing to "backfill" the database later only if they have established a track record of success with that fund. If managers launch a

product which does not establish a successful record, they may choose not to submit the data to a database.

14. If a database allows managers to backfill returns in this manner, this could lead to the database presenting an incomplete universe of investment products. If these excluded products on average delivered poorer performance than products in the database, an analysis of the average performance of managers using such a database would be biased upwards compared to a complete universe of products.

15. We have explored the possibility that backfill bias could have affected performance results presented in the interim report. In particular, we have examined whether the average performance of products contained in Morningstar Direct and eVestment could be affected by backfilling of returns in the manner described above.

16. If backfill bias were present then this could affect the average returns information presented in Chapter 6 of the interim report, as well as the analysis of recommended and non-recommended investment products presented in Annexes 4 and 6 to the interim report. Specifically, we are concerned that backfill bias could overstate average returns presented in Chapter 6, and could be responsible for the relatively good performance of non-recommended [1] (and potentially recommended) products in these Annexes, which would therefore constitute an unfair benchmark for recommended products.

eVestment database

17. Following the publication of the interim report we received feedback that the eVestment database allows managers to backfill returns. We contacted eVestment to establish if this was the case and, if so, whether they had any means of identifying whether managers had backfilled returns. eVestment provided us with a list of each product's inception date and the date each product was added to the database.

18. We have run a sensitivity on the manager rating performance analysis presented in the interim report. In this sensitivity we remove observations for the period between a product's inception date and the date a product was added to the eVestment database. The justification for this is that this period is potentially biased upwards due to backfilling. This impacts the majority of strategies in our dataset.[2] See Appendix 1 to this annex for the results.

Morningstar Direct database

19. We did not receive feedback from third parties that Morningstar Direct allowed managers to backfill returns. Nonetheless, we contacted Morningstar to discuss this possibility. Morningstar explained that within the UCITS environment the vast majority of manager requests to add a product to their database relate to new product launches. For new products backfill bias would not be a concern.

20. Morningstar stated that if a product had been incepted and run using private client money or the asset manager's own seed money for an initial period, then they would not allow performance data established over that period to be

[1] The problem of backfill bias could be more serious for smaller-AUM and non-recommended products if they are subject to less scrutiny than their recommended counterparts.

[2] The eVestment data set containing Gross returns, in USD currency, of institutional products which we use in our analysis contains 679,001 observations and 19,649 unique products. Of these, 15,920 (88%) products in the database have observations which were added to the database after their reported inception date.

submitted to its database or backfilled. Morningstar stated that it would allow a product's past performance history to be added into its database under four specific circumstances[3], that only a full track record would be accepted (as opposed to a manager-selected partial history), and that this track record had to have been established when the product was publicly available for investment.

21. Based on the feedback above we consider it unlikely that this database is susceptible to backfill bias.

Simulated Returns

22. We received feedback after the publication of the interim report that some third party databases allow new products to submit simulated past performance data. Specifically, these are cases where a new product launches and the manager generates a past performance history by simulating (hypothetical) returns. We consider there is a risk that performance data simulated in this particular way could be biased upwards, as a result of efforts to make a new products appear more attractive to prospective investors. We contacted eVestment and Morningstar to establish whether their databases allowed simulated returns to be included.

23. eVestment stated that their database allows product providers to simulate returns, and that database users can identify such products. We requested a list containing the start date and end date of simulated performance dates for each product in eVestment's database. We found there were only a very small number of such products in the database.[4] We produced a sensitivity in which we removed periods where performance data had been simulated in the manner described above. The results are shown in Appendix 1.

24. Morningstar stated that they did not allow new products to simulate a past performance history.

Zero or Low Access Products

25. We received feedback after publication of the interim report that some products shown in the eVestment database are in reality zero or low access products. A respondent stated that these products typically have a low AUM and that the FCA should consider excluding these products when assessing the performance of consultants' manager ratings service. We are not convinced that these products should be excluded from an assessment of average performance. This is because such products are currently or were available to some institutional investors.

26. Nonetheless, we have run a sensitivity in which we calculate average manager performance weighted by AUM. An asset weighted average measure gives less weight to smaller products than larger products.

27. Table 1 below shows average quarterly performance against benchmark for all institutional products in the eVestment database, over the 2006-15 period. We have removed observations (product-quarters) where returns were backfilled or

[3] These are share class-share class, predecessor-successor, parent-child, and master-feeder. See Morningstar Methodology Paper 'Morningstar Extended Performance Methodology (Europe, Asia, Africa)', June 2014, for further details.

[4] The eVestment data set containing Gross returns, in USD currency, of institutional products which we use in our analysis contains 679,001 observations and 19,649 unique products. Of these, only 270 products contained some simulated returns (around 1% of all products), which related to 4,130 observations (around 1% of all observations).

simulated. The first column shows results using a simple average; for each quarter we calculate a simple average excess return across products, and we then calculate a time-series average excess return. The second column shows results using a weighted average; for each quarter we calculate an asset-weighted average excess return across products, and we then calculate a time-series average excess return. The results show that there is little difference between the results in the two columns. We conclude that zero or low access products are unlikely to affect the results of our performance assessment of investment consultants' manager ratings, even if we were to accept they should be excluded.

Table 1: Average quarterly performance against benchmark for institutional products (percentage points)

Variables	(1)	(2)
	Simple average excess return	Asset weighted excess return
Gross quarterly returns over benchmarks	**0.09**	**0.06**
	(1.29)	(0.70)
Gross quarterly returns over benchmarks less asset management charge+	**0.04**	**0.00**
	(0.50)	(0.04)
Gross quarterly returns over benchmarks less asset management charge and investment consultant fees ++	**0.01**	**-0.02**
	(0.15)	(-0.24)

Source: eVestment data on net flows, returns, AUM. Sample of asset managers' for segregated mandate fees. The number of observations reflects the number of time periods (quarters) in our analysis. Returns expressed in quarterly percentage points. The sample period is Q1 2006 to Q4 2015.
t-statistics based on standard errors, robust to conditional heteroscedasticity and serial correlation of up to two lags as in Newey and West (1987), are reported in parentheses.
***, **, * denote statistical significance at 1%, 5%, and 10% levels, respectively. Therefore none of the figures in table 1 are statistically significant at these levels.
+ We have assumed an average charge of 23bps (see Annex 3: Segregated Mandate Pricing Analysis).
++ Based on information provided by investment consultants we estimate that fees for advisory services for clients with assets under £50bn range from 5-15bps on an annualized basis (see Chapter 8 of the interim report). We used a midpoint of 10bp as our assumption for consultant fees.

Potential for benchmark gaming by fund managers

28. The analysis in the interim report compared the performance of funds to Morningstar category benchmarks, as reported in Morningstar Direct. For institutional products, we compared performance to manager-specified benchmarks as reported by eVestment. We have only assessed the scope for gaming of these benchmarks in this sub-section.

Morningstar Category: Morningstar's designated peer group for a fund

29. Morningstar assigns categories to all funds, based on their average holdings statistics over the past three years.[5] Morningstar's editorial team also reviews and approves all category assignments. If a fund is new and has no history, Morningstar estimates which category it will fall in, before giving it a more permanent category assignment. Additionally, if Morningstar reassigns a fund to a different category, the fund's performance will only be graphically compared to that category for the period following reclassification.

[5] http://www.morningstar.co.uk/uk/glossary/98381/morningstar-category.aspx

30. With regards to calculating sector returns, Morningstar will create a simple average of the returns of the funds over that period. If a fund includes multiple underlying share classes, each share class is counted as a fraction of the overall fund. For example, if a fund has five share classes, each share class will get a weight of 0.2.[6] Sector returns data also include obsolete funds, removing the risk of survivorship bias. As the process of Morningstar Category assignment is largely objective, we consider there is little scope for gaming on the side of the fund manager.

Morningstar Category Benchmark: The designated index benchmark used for each peer group category, determined by Morningstar for each Category.

31. The benchmarks used are popular indexes such as the FTSE 100, S&P 500 or MSCI All Country index. As discussed above, there is also little scope for fund managers being able to game this benchmark as the benchmark is selected by Morningstar.

Institutional products

32. The interim report (see Annex 6) discussed a concern that in theory the benchmarks which institutional investment managers specify to third party databases could be chosen to artificially inflate their performance. We consider it is unlikely for these benchmarks to be easily gamed because institutional managers face a strong incentive to ensure that benchmarks are recognised by investment consultants and potential investors, and in practice many benchmarks are chosen in consultation with clients.

The implications of tax on index returns

33. In both marketing materials and in third party databases, the most common way for the comparative performance of equity funds to be presented is versus equity indices, such as the FTSE 100 and S&P 500. For most equity indices, three standard types of benchmark data are calculated by index providers:
    - **Price:** Represents the current value of all underlying securities in an index, relative to a certain time.
    - **Gross (Total) return (TR):** Represents the current value of all underlying securities in an index and dividend payments relative to a certain time. (assuming all dividends are reinvested in the same security). The index value is given as the return relative to a given time, plus the initial value of an index. I.e. if the initial value of the index was 1000 at time T and it had a 5 year gross return of 10%, the gross return index value at time T +5 would be 1100.
    - **Net return (NR)**: Represents the current value of all underlying securities in an index and dividend payments relative to a certain time. Unlike total return, net return assumes securities are held by international investors. As such, withholding tax deductions are applied to dividends before reinvesting.

34. As standard market practice, funds investing in a local market (such as a UK domiciled fund investing in the FTSE 100) will reference a TR index, whereas funds with a multi-country strategy will reference an international NR index.

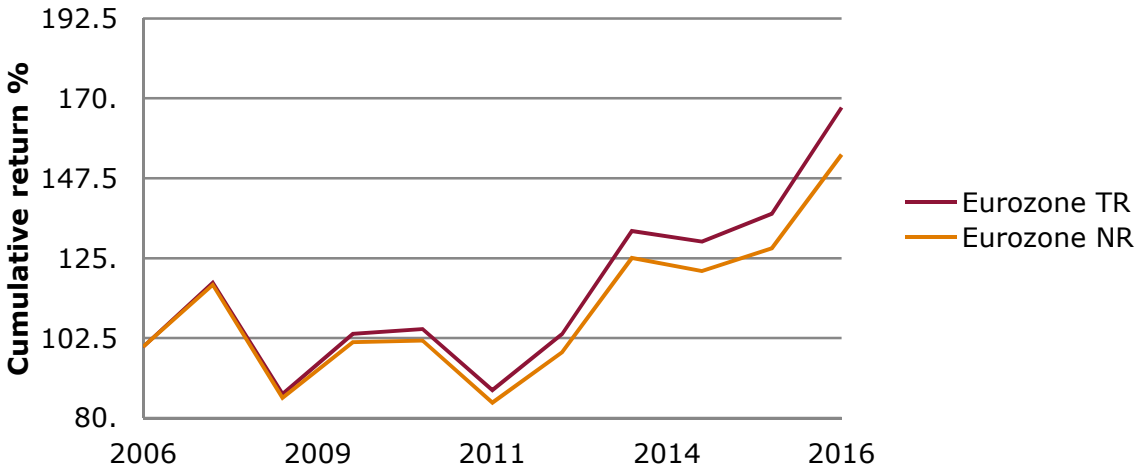
[6] http://www.corporate.morningstar.com/us/documents/MethodologyDocuments/MethodologyPapers/MorningstarRankingMethodologies.pdf

35. This discrepancy is due to the treatment of tax on foreign investors. The payer of investment income is required to withhold or deduct tax for international investors. Most jurisdictions implement a withholding tax on payments of interest or dividends, affecting the returns for foreign investors.

36. Withholding tax can be significant, ranging from 10-30%.[7] As the NR version of indices reflects this tax, returns for the index can be substantially lower than the TR version of the index, as seen in Figure 1 below.

37. When calculating the NR version index administrators typically assume a worst case scenario, from the perspective of investors, for withholding tax. However, in many cases double taxation agreements will exist between countries, known as bilateral tax treaties, which can materially reduce the actual withholding tax amount payable by international investors and asset managers in funds which are replicating or referencing a NR index.

Figure 1 - Return of Morningstar Eurozone Indices



Source: Morningstar Direct

38. In practice, a NR index would not reflect the actual level of withholding tax paid by international investors in a fund that references or replicates the NR index for the following reasons:

- **Tax-treaties:** many countries will have bilateral tax agreements, meaning that withholding tax is either fully or partially reclaimable by investors in funds.
- **Inclusion of domestic stock:** international funds will regularly include domestic stock from the fund's domicile that is not subject to withholding tax.
- **Stock lending:** investors may choose to lend out their stocks over the dividend period to a counter-party based in a more tax-favourable jurisdiction until it goes ex-dividend, a practice known as "dividend stripping".[8]
- **Synthetic replication:** managers of a fund that replicates an index using derivatives or swaps will also likely be tax optimised, meaning that the actual withholding tax paid will be less than is assumed by the NR index administrator.

[7] taxsummaries.pwc.com/uk/taxsummaries/wwts.nsf/ID/Withholding-tax-(WHT)-rates – PwC

[8] We understand that tax optimisation strategies involving dividend stripping are now less common.

39. For these reasons a fund's relative performance may be artificially inflated when measured against a NR index benchmark. This effect can be seen most easily with ETFs. The average withholding tax for components of Euro Stoxx 50, a popular Eurozone index, is 24%. This resulted in the TR version of the index outperforming the NR version by over 1% in 2010.[9] Similarly, in 2010 many EuroStoxx 50 ETFs, which track the NR index as standard, outperformed the index by up to 0.50% after management fees. However, this outperformance was largely due to tax optimisation. Additionally, many Euro Stoxx trackers are domiciled in France, Germany and Italy, thus benefiting from a large proportion of domestic stock and tax treaties not accounted for in the NR index. It is important to note that although ETFs tracking the Eurostoxx 50 NR index are the most common example of funds using Net Return Indexes, we are not aware of any open-ended funds available to UK investors which either track this index, or reference it as their performance benchmark. Nonetheless, international funds available to UK investors that use a NR index benchmark potentially show inflated outperformance.

40. In addition to international funds, relative performance could also potentially be inflated by funds with single country strategies choosing to use a NR index benchmark. For example, a UK-domiciled fund invested wholly in UK stock using a NR index, or invested in US Stock using a NR index (given the double taxation agreements between the UK and the US).[10] However, we have not found any evidence of this practice.[11]

41. Two potential concerns arise from the fact that funds may reference either a TR or a NR index benchmark. First, investors unaware of the differences between TR and NR benchmarks may be more likely to invest in funds that use a NR rather than a TR benchmark. This is because all other things equal, past performance against the benchmark would be higher when assessed against a NR than a TR benchmark. This could make it harder for investors to compare products effectively.

42. We note that standard market practice is for funds investing in local markets to reference a TR index, whereas funds operating a multi-country strategy will reference an international NR index. Given that the way withholding tax is treated by administrators of indices may not reflect the actual tax situation investors face, this could flatter the performance of some international strategies which reference a NR index. This gives rise to the possibility that at the margin investors that are unaware of the differences between TR and NR indexes could opt for an international strategy over a local strategy simply due to the treatment of withholding tax by index administrators.

43. A second potential concern exists that the average performance of funds against a benchmark shown in third party databases could be upwardly biased due to some funds using NR benchmarks.

44. We have investigated the potential effect on our analysis of returns in the eVestment database and found that of all the strategies in the database, 11%

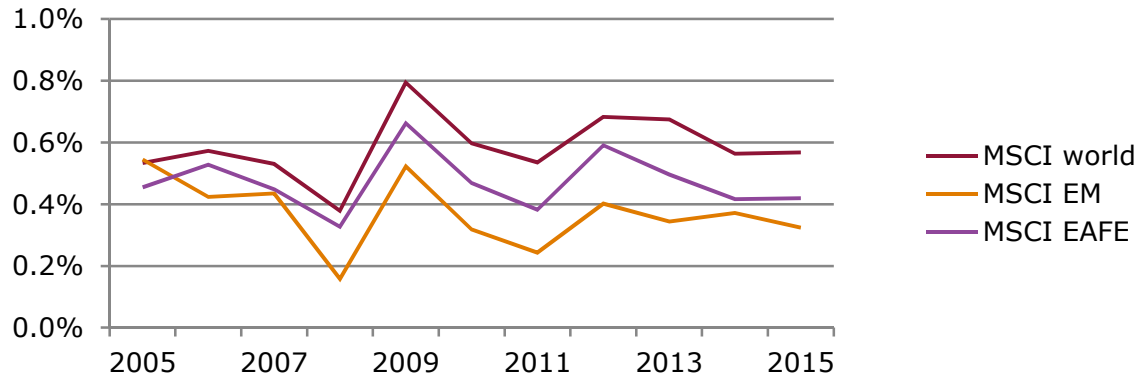
[9] http://www.etf.com/sections/features-and-news/7551-same-index-different-return?nopaging=1

[10] In these instances benchmarking a fund against a NR index could overstate a fund's relative performance by 10 percentage points over a 5-year period.

[11] Our analysis suggests the extent to which this may be a concern is limited. We found no instances of UK-domiciled UK equity funds using NR indexes as their prospectus benchmark in Morningstar Direct. In addition we found that Category indexes used by Morningstar for UK equity fund benchmarking were also consistently TR indexes in Morningstar Direct. The same finding held for UK-domiciled US equity funds, a popular investment product for UK investors. Both prospectus and Morningstar Category benchmarks were expressed on a TR basis.

were following benchmarks defined as net return indices. For this 11% the maximum upwards bias is the difference between the gross index and net index. To gain an insight into the upper bound of the impact on our analysis we took the average difference in returns for the three most commonly benchmarked net return indices, as shown in Figure 2. The average difference across these three indices is 48bps.

Figure 2 - The difference between gross and net index annual returns for commonly used net indices (percentage points)



Source: Morningstar Direct

45. Assuming that these funds do not attract above average assets under management then any bias on the whole sample is likely to be only around 5bps per year. Therefore, we do not consider this potential concern significantly affects our analysis of institutional products.

46. We have also examined the potential effect on our analysis of returns in the Morningstar Direct database. We find that 35% were following benchmarks described as net return indices. If we again assume the maximum possible upwards bias is the difference between the gross index and the net index, applying the same calculations as the paragraph above we estimate that bias for the whole sample could be up to 15bps.

Appendix 1: Investment consultants manager rating performance sensitivity

Introduction

1. In the interim report we presented an assessment of the performance of a sample of investment consultants' manager ratings (see Annex 6 to the interim report). The motivation for running this test was to understand whether consultants are able to add value through their manager ratings service.

2. A client of an investment consultant is paying for a service to receive (amongst other services) a shortlist of highly rated managers in a given asset class/style. As such, the client is expecting the consultant to be able to pick 'winners' relative to other products in that asset class/style. One way of testing if this specific service is adding value is by comparing the average performance against benchmark of highly rated products is greater than the average performance against benchmark of non-highly rated products. However, we recognise that consultant ratings and other consultant services can provide value to investors in other ways too.

3. The analysis in the interim report found that both highly rated and non-highly rated products outperformed their benchmarks on a gross of fees basis by between 80 and 100 basis points per annum, and that this outperformance was statistically significant. However, we also found that there was no statistically significant difference between the performance against benchmark of highly rated products and non-highly rated products. This latter result suggests that investment consultants in our sample were historically not able to pick out products that significantly outperformed (against benchmark) other products. We noted in the interim report that this finding was consistent with previous academic literature that examined this area.

4. Since the interim report we received feedback from several respondents on ways in which the data set we used for our analysis could be improved. In particular, we received feedback that the data set we used could be subject to backfill bias, and because it contained some returns that had been simulated could also exhibit an upwards bias.

5. In this appendix we assess the performance of investment consultants' manager ratings after removing observations that were backfilled or simulated. We have defined observations that were backfilled or simulated in the main body of this annex. We note that the majority of products in our data set contained some quarters where returns are defined as backfilled i.e. the returns related to quarters falling between a product's inception date and the date that product was added to eVestment's database. We accept that not all of these observations will be biased upwards.

Methodology and results

6. We have re-run the analysis from the interim report after removing observations that were backfilled or simulated. Therefore, we follow the same methodology presented in Annex 6 of the interim report.

7. We start with a time series analysis of the gross returns of highly rated and non-highly rated products in excess of manager-selected benchmarks (as reported by eVestment).

8. We then present results on a net basis, i.e. after asset manager charges. We have used an average annual management charge of 23bps for 2015 for all products (see Annex 3: Segregated Mandate Pricing Analysis), and applied it backwards to earlier periods. To the extent that fees in prior years were higher than they were in 2015, our methodology would overstate net performance. This represents a different charges assumption from the interim report. In the interim report we used headline fees for each product recorded in eVestment for 2015. We consider that headline fees could overstate the actual fees incurred by institutional investors due to discounting. We have therefore used data on actual charges of segregated mandates, collected from a sample of asset managers as part of the market study. These charges are materially lower than the average fees used in the interim report.

9. We also present results net of the fees of investment consultants. Based on information provided by investment consultants we estimate that fees for advisory services for clients with assets under £50bn range from 5-15bps on an annualized basis (see Chapter 8 of the interim report). We used a midpoint of 10bp as our assumption for consultant fees.

10. Table 2 shows the performance of highly rated products based on gross excess returns (top panel), net excess returns (middle panel), and net excess returns additionally net of investment consultant fees (bottom panel).[12]

[12] The results for highly rated products assume that investors invest only in those products that are highly rated, and update their portfolios in accordance with changes to those ratings.

Table 2: Institutional quarterly performance results: simple comparison

Variables	(1)	(2)	(2) less (1)
	Not highly rated	Highly rated	
Gross quarterly returns over benchmarks	**0.08**	**0.10**	**0.02**
	(1.14)	(1.24)	(0.29)
Gross quarterly returns over benchmarks less asset management charge[+]	**0.03**	**0.04**	**0.02**
	(0.35)	(0.52)	(0.29)
Gross quarterly returns over benchmarks less asset management charge and investment consultant fees [++]	**0.00**	**0.02**	**0.02**
	(0.00)	(0.21)	(0.29)

Source: eVestment data on net flows, returns, AUM. Sample of asset managers' for segregated mandate fees. Ratings data sourced from investment consultant firms in our sample. t-statistics based on standard errors, robust to conditional heteroscedasticity and serial correlation of up to two lags as in Newey and West (1987), are reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1 Therefore none of the figures statistically significant at these levels.
The number of observations reflects the number of time periods (quarters) in our analysis. Returns expressed in percentage points.
[+] We have assumed an average charge of 23bps (see Annex 3: Segregated Mandate Pricing Analysis).
[++] Based on information provided by investment consultants we estimate that fees for advisory services for clients with assets under £50bn range from 5-15bps on an annualized basis (see Chapter 8 of the interim report). We used a midpoint of 10bp as our assumption for consultant fees.

11. Column 1 of Table 2 shows the average excess return in terms of quarterly percentage points of all non-highly rated products in the sample over their respective benchmarks. Column 2 shows the average of the quarterly excess returns of highly rated products. For example, a figure of 0.10 in the table equates to an excess return of approximately 40 basis points on an annualized basis. Column 3 shows the difference between column 2 and column 1.[13]

12. Table 2 shows that gross quarterly returns over benchmarks for non-highly rated products were on average 0.08 percentage points, while the equivalent for highly rated products was 0.10 percentage points. Neither of these are statistically significantly different from zero. The equivalent results at the interim report were 0.23 percentage points and 0.20 percentage points respectively, and each of these was statistically significantly different from zero. Therefore, removing backfilled and simulated observations makes a material difference to our results. After removing backfilled and simulated returns, both highly rated and non-highly rated products' returns on average no longer outperform their benchmarks gross of fees.

13. Column 3 of Table 2 shows that the difference between the quarterly gross excess returns of highly rated and non-highly rated products is 0.02 percentage points, and this difference is not statistically significant. This is very similar to our finding in the interim report, where this difference was also not statistically significant (though the sign of the difference was negative).

14. On a net of fees basis, the results in Table 2 are also very similar to our results at the interim report. That is, we still find that neither highly rated nor non-highly rated products outperformed benchmarks net of fees, and that the difference

[13] We adopt a simple comparison in this table in which we do not condition on highly rated and non-highly rated products being in the same investment category.

between the net excess returns of highly rated and non-highly rated products is still not statistically significant.

Appendix conclusions

15. The interim report's analysis of the performance of investment consultants' ratings found that gross of fees, both highly rated and non-highly rated products on average outperformed benchmarks. However, we find that after removing backfilled and simulated observations both highly rated and non-highly rated products' returns on average no longer outperform their benchmarks gross of fees.

16. The responses to the interim report expressed a concern that the eVestment data set could be subject to backfill bias, and should be adjusted to remove simulated returns. The concerns over backfill bias are also shared in the literature, and we note that academics have sought to adjust for backfill bias by, for example, removing the first few periods of a products' returns.[14]

17. In this Appendix we have used a more direct means of adjusting for observations that are potentially backfilled. While our method of identifying backfilled returns is unlikely to be perfect, backfill bias is a real concern and we therefore conclude that the results in this Appendix are likely to be more accurate than those presented in the interim report. Therefore, we consider that for our sample both highly rated and non-highly rated products' returns on average did not outperform their benchmarks gross of fees, or net of fees.

18. Irrespective of whether we adjust for backfilled and simulated returns or not, we find that there is no significant difference between the excess performance of highly rated and non-highly rated products for our sample. This suggests that investment consultants in our sample were historically not able to pick out products that significantly outperformed (against benchmark) other products.

[14] See for example Jenkins, Jones and Martinez. Tim Jenkinson, Howard Jones, Jose Vicente Martinez, 2016, Picking Winners? Investment Consultants' Recommendations of Fund Managers, The Journal of Finance, 71(5) pp. 2333-2370.

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