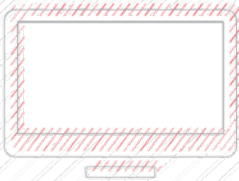
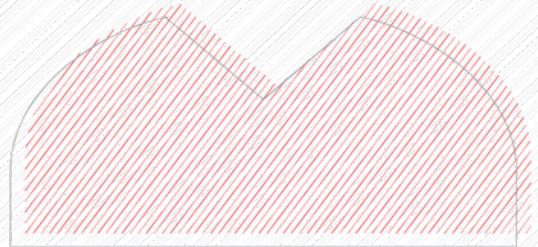
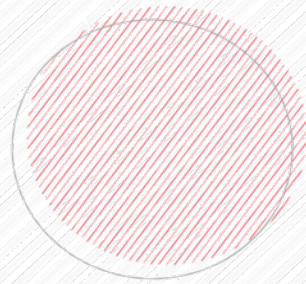
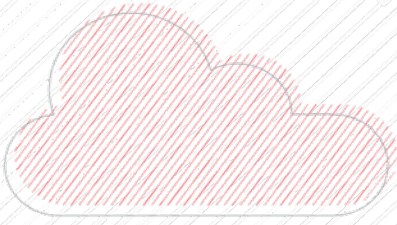
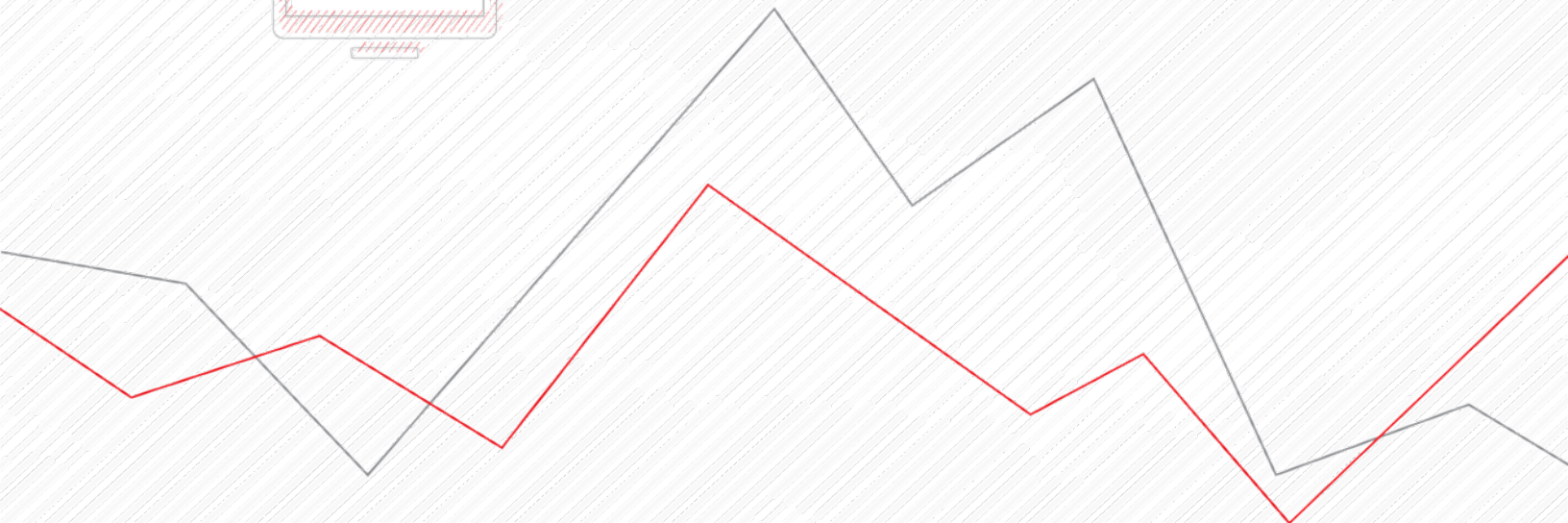


Morningstar Direct Training Guide
Using Equity Attribution to
understand performance



MORNINGSTAR



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Using Equity Attribution to Understand Performance

Equity attribution, also known as micro attribution, compares a portfolio's performance to that of a benchmark by decomposing the excess return to explain the impact of various investment decisions.

You may analyse the results by various groupings such as industry classifications, regional classifications, style classifications or custom classifications.

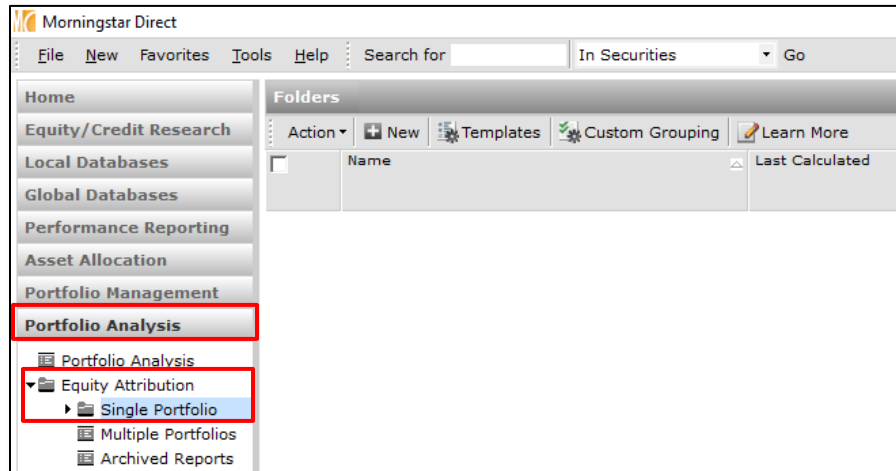
Equity attribution reports can be created from the Investment List, Search Criteria, and Performance Reporting folders or directly from the Equity Attribution section under the Portfolio Analysis folder.

Overview

To access Equity Attribution, do the following:

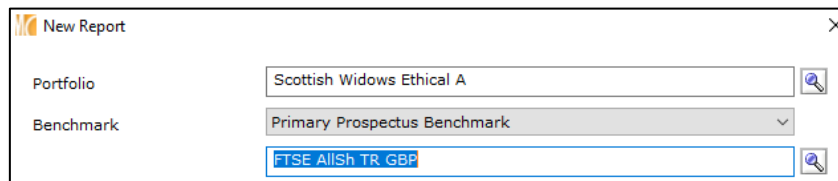
1. Login to Morningstar Direct Desktop edition.
2. Click the **Portfolio Analysis** folder.
3. Expand the Equity Attribution section.
4. Click on **Single Portfolio**.

Exercise 1: Creating an Equity Attribution report



To create an equity attribution analysis report, do the following:


1. From the toolbar, click **New**. The **New Report** dialogue box opens on screen.
2. In the **Portfolio** field, type **Scottish Widows Ethical A**; click the fund name when it appears to select it.

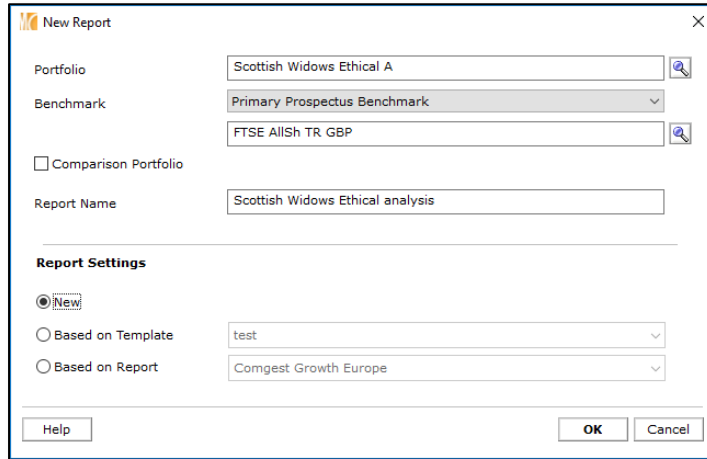


The **Benchmark** field selects the **Primary Prospectus Benchmark** by default, which is FTSE AllSh TR GBP in this instance. You could use the drop-down menu to select another pre-set index or click the magnifying glass to select a different benchmark.

- ☞ **Note:** Equity Attribution runs on holdings, therefore you must have access to both the portfolio and the benchmark holdings data to run this type of analysis.

3. Next you can decide on the report title, let's call it **Scottish Widows Ethical analysis**.
4. Under **Report Settings**, select the **New** option.

 **Note:** You could also use the settings from an existing template or report.



New Report

Portfolio: Scottish Widows Ethical A

Benchmark: Primary Prospectus Benchmark

Comparison Portfolio: ☐ FTSE AllSh TR GBP

Report Name: Scottish Widows Ethical analysis

Report Settings

☒ New

☐ Based on Template: test

☐ Based on Report: Comgest Growth Europe

Help OK Cancel

5. Click **OK**. The **Settings** dialogue box opens on screen.

The **Settings** dialogue box lets you decide, amongst other things, on the timeline of your analysis, the portfolio breakdown as well as investment process.

Exercise 2: Report Settings

1. Set the **Start Date** to **3 months ago** and the **End Date** to **Last Quarter End**.
2. Set the **Display Frequency** to **Single**.
3. Set the **Calculation Frequency** to **Monthly**.
4. We will keep **Morningstar Sector** as our **Grouping** option.
5. As **Investment Process**, let's use the **Two-Factor: Interaction in Selection Effect**.

The **Two-Factor: Interaction in Selection Effect** option focuses on one or multiple Weighting allocation decisions prior to Security Selection. The Weighting Effect is primary, and the Selection Effect is secondary. The Interaction Effect is incorporated in the Selection Effect.

Note: For more information on the Investment Process, refer to [Appendix A: Investment Process](#)

6. Using the magnifying glass for the Cash Proxy field, select your desired risk-free proxy. In this instance, I selected Euribor 3 Month, but you might want to use a risk-free rate more relevant to your market.

The screenshot shows the 'Settings' dialog box with the following configurations:

- Report Name:** Scottish Widows Ethical analysis
- Time Period:**
 - Start Date: 3 months ago (07-01-2019)
 - End Date: Last Quarter End (09-30-2019)
 - Display Frequency: Single
 - Calculation Frequency: Monthly
 - Results for time periods greater than one year: ☒ Cumulative ☐ Annualized
- Grouping:**
 - Level: 1. Morningstar Sector
 - Buttons: Add, New
- Calculation Options:**
 - Investment Process: Two-Factor: Interaction in Selection Effect
 - Multi-period Linking Method: ☒ Arithmetic ☐ Geometric
 - Infer Portfolio Holdings: ☒ Forward in Time ☐ Backward in Time
 - ☐ Expand Composite Asset
 - Exclusions:
 - Cash Proxy: Euribor 3 Month EUR
 - Return Sources: Morningstar - Daily Market Return
 - Fundamentals: Morningstar

At the bottom, there are 'Save As 1', 'OK', and 'Cancel' buttons.

7. From the left navigation panel, click **View Settings**.

In this section, you can go through each of the titles on the left hand-side and decide what you would like to display or hide in your report. For now, we will leave the settings as is.

Note: For more information on those settings, please refer to [Appendix B: View Settings](#)

8. Click **OK**. The report calculates.

Once the calculation is complete, the **Highlights** view will automatically get activated and display an overall summary of the results. Depending on how you set up your View settings, those appropriate views on the far left will get activated for further analysis.

Note: The Attribution report uses the currency of the selected fund by default. You could always change the currency from the toolbar.

Exercise 3: Attribution Results

| | Weights % | Rescaled Weights % | Return % | Contribution % | Attribution Effect |
|---------------------------------------|---------------|--------------------|---------------|----------------|--------------------|
| Portfolio Benchmark | 0.00 | 8.95 | 0.00 | 9.13 | (8.03) |
| Basic Materials | 10.12 | 6.82 | 10.03 | 6.96 | 3.59 |
| Communication Services | 13.68 | 7.56 | 13.56 | 7.72 | 14.74 |
| Consumer Cyclical | 1.99 | 14.41 | 1.97 | 14.72 | 3.72 |
| Consumer Defensive | 1.70 | 14.14 | 1.68 | 14.44 | (13.77) |
| Energy | 24.01 | 18.01 | 23.79 | 18.39 | 3.96 |
| Financial Services | 12.14 | 9.06 | 12.03 | 9.20 | (0.60) |
| Healthcare | 19.51 | 9.43 | 19.33 | 9.63 | 1.43 |
| Industrials | 0.00 | 2.14 | 0.00 | 2.18 | 6.87 |
| Real Estate | 10.76 | 1.40 | 10.67 | 1.43 | (2.04) |
| Technology | 2.15 | 2.60 | 2.13 | 2.65 | 5.52 |
| Utilities | 0.00 | 3.47 | 0.00 | 3.53 | 0.68 |
| Unclassified | 4.87 | 0.00 | 4.82 | 0.00 | (1.21) |
| Cash | 100.93 | 97.98 | 100.00 | 100.00 | 2.92 |
| Attribution Total | | | | | 1.27 |
| Bond | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Missing | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Performance | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Other | 0.00 | 1.80 | 0.00 | 0.00 | 0.00 |
| Total | 100.93 | 100.00 | 100.00 | 100.00 | 2.92 |
| Reported Total | | | | | 1.27 |
| Residual | | | | | 0.25 |
| (Reported - Attribution Total) | | | | | 0.00 |

If we look at the **Active Return** column, we notice we have a positive active return of 1.65.

Let's go to the **Attribution** view to interpret the results at the classification and security levels.

In this example, two levels are displayed. Level 1 is the Sector breakdown and Level 2 is the Security breakdown.

| Name | Level 1 | Level 2 | Weights % Portfolio | Benchmark | +/- | Rescaled Weights % Portfolio | Benchmark | +/- | Return % Portfolio | Benchmark | +/- | Contribution to Return % Portfolio | Benchmark | +/- | Attribution Effect Morningstar Sector Weighting % | Selection % | Active Ret% |
|--------------------------------|---------|---------|------------------------|-----------|---------|---------------------------------|-----------|---------|-----------------------|-----------|---------|---------------------------------------|-----------|--------|--|-------------|-------------|
| Basic Materials | | | 0.00 | 6.95 | (0.95) | 0.00 | 9.13 | (9.13) | | (8.03) | | 0.00 | (0.77) | 0.77 | 0.00 | 0.00 | 0.89 |
| Communication Services | | | 10.12 | 6.82 | 3.30 | 10.03 | 6.96 | 3.07 | 3.59 | 7.09 | (3.50) | 0.35 | 0.48 | (0.13) | 0.17 | (0.33) | (0.17) |
| Consumer Cyclical | | | 13.68 | 7.56 | 6.12 | 13.56 | 7.72 | 5.83 | 14.74 | 7.18 | 7.56 | 2.01 | 0.54 | 1.47 | 0.37 | 0.97 | 1.34 |
| Consumer Defensive | | | 1.99 | 14.41 | (12.43) | 1.97 | 14.72 | (12.75) | 3.72 | 3.01 | 0.71 | 0.05 | 0.43 | (0.39) | (0.20) | (0.06) | (0.26) |
| Energy | | | 1.70 | 14.14 | (12.44) | 1.68 | 14.44 | (12.76) | (13.77) | (5.07) | (8.70) | (0.30) | (0.76) | 0.46 | 0.83 | (0.19) | 0.64 |
| Financial Services | | | 24.01 | 18.01 | 6.00 | 23.79 | 18.59 | 5.40 | 2.96 | (1.89) | 4.85 | 0.75 | (0.37) | 1.12 | (0.14) | 1.16 | 1.03 |
| Healthcare | | | 12.14 | 9.06 | 3.08 | 12.03 | 9.20 | 2.83 | (0.60) | 12.57 | (13.16) | (0.67) | 1.09 | (1.16) | 0.34 | (1.55) | (1.21) |
| Industrials | | | 19.51 | 9.43 | 10.08 | 19.33 | 9.63 | 9.70 | 1.43 | 5.14 | (3.70) | 0.30 | 0.49 | (0.19) | 0.36 | (0.66) | (0.30) |
| Real Estate | | | 0.00 | 2.14 | (2.14) | 0.00 | 2.18 | (2.18) | | 5.87 | | 0.00 | 0.15 | (0.15) | (0.13) | 0.00 | (0.13) |
| Technology | | | 10.76 | 1.40 | 9.36 | 10.67 | 1.43 | 9.23 | (2.04) | (14.09) | 12.05 | (0.22) | (0.22) | (0.00) | (1.49) | 1.37 | (0.11) |
| Utilities | | | 2.15 | 2.60 | (0.45) | 2.13 | 2.65 | (0.52) | 5.52 | 6.65 | (1.08) | 0.12 | 0.17 | (0.05) | (0.02) | (0.03) | (0.04) |
| Unclassified | | | 0.00 | 3.47 | (3.47) | 0.00 | 3.53 | (3.53) | | 0.68 | | 0.00 | 0.02 | (0.02) | 0.02 | 0.00 | 0.02 |
| Cash | | | 4.87 | 0.00 | 4.87 | 4.82 | 0.00 | 4.82 | (1.21) | | | (0.07) | 0.00 | (0.07) | (0.05) | 0.00 | (0.05) |
| Attribution Total | | | 100.93 | 97.98 | 2.95 | 100.00 | 100.00 | (0.00) | 2.92 | 1.27 | 1.65 | | 2.92 | 1.27 | 1.65 | 0.96 | 0.69 |
| Reported Total | | | | | | | | | 3.17 | 1.27 | 1.89 | | | | | | |
| Residual(Reported - Attrib...) | | | | | | | | | 0.25 | 0.00 | 0.25 | | | | | | |

If we go to the **Active Return** column, we notice we have a positive active return of 1.65%.

Our Active Return is driven by overall positive Allocation and Selection Effects.

| Name | Level 1 | Level 2 | Attribution Effect Morningstar Sector Weighting % | Selection % | Active Ret% |
|------------------------|---------|---------|--|-------------|-------------|
| Consumer Cyclical | | | 0.37 | 0.97 | 1.34 |
| Financial Services | | | (0.14) | 1.16 | 1.03 |
| Basic Materials | | | 0.89 | 0.00 | 0.89 |
| Energy | | | 0.83 | (0.19) | 0.64 |
| Unclassified | | | 0.02 | 0.00 | 0.02 |
| Utilities | | | (0.02) | (0.03) | (0.04) |
| Cash | | | (0.05) | 0.00 | (0.05) |
| Technology | | | (1.49) | 1.37 | (0.11) |
| Real Estate | | | (0.13) | 0.00 | (0.13) |
| Communication Services | | | 0.17 | (0.33) | (0.17) |
| Consumer Defensive | | | (0.20) | (0.06) | (0.26) |
| Industrials | | | 0.36 | (0.66) | (0.30) |
| Healthcare | | | 0.34 | (1.55) | (1.21) |
| Attribution Total | | | 0.96 | 0.69 | 1.65 |

We can now take a deep dive and identify the key contribution and the worst detractors at the sector and stock level.

1. Double-click on the **Active Return** column to sort descending. The Consumer Cyclical sector is at the top.
2. Click the arrow next to Consumer Cyclical to expand the sector. We notice Boohoo Group PLC is the most contributing stock, with a return of 25.32% over the last quarter. This stock drives the Selection Effect of this sector.

| Name | Level 1 | Level 2 | Rescaled Weights % Portfolio | Benchmark | +/- | Return % Portfolio | Benchmark | +/- | Contribution to Return % Portfolio | Benchmark | +/- | Attribution Effect Morningstar Sector Weighting % | Selection % | Active Ret% |
|--------------------------------|---------|---------|---------------------------------|-----------|--------|-----------------------|-----------|-------|---------------------------------------|-----------|------|--|-------------|-------------|
| Consumer Cyclical | | | 13.56 | 7.72 | 5.83 | 14.74 | 7.18 | 7.56 | 2.01 | 0.54 | 1.47 | 0.37 | 0.97 | 1.34 |
| Boohoo Group PLC | | | 2.56 | 0.00 | 2.56 | 25.32 | | | 0.60 | 0.00 | 0.60 | | 0.43 | 0.43 |
| Bellway PLC | | | 1.80 | 0.16 | 1.64 | 20.14 | 20.14 | 0.00 | 0.38 | 0.03 | 0.35 | | 0.21 | 0.21 |
| InterContinental Hotels Gro... | | | 0.80 | 0.43 | 0.37 | 10.58 | (1.25) | 11.83 | 0.25 | (0.01) | 0.26 | | 0.17 | 0.17 |
| Countryside Properties PLC | | | 1.89 | 0.06 | 1.83 | 12.60 | 12.60 | 0.00 | 0.24 | 0.01 | 0.23 | | 0.10 | 0.10 |
| Whitehead PLC | | | 0.00 | 0.28 | (0.28) | | (7.24) | | 0.00 | (0.02) | 0.02 | | 0.08 | 0.08 |

3. Let's sort ascending on the Active Return column and expand the Healthcare sector. Abcam PLC has a negative Selection Effect due to poor performance, and the sector's Active Return is driven slightly up by a positive Allocation Effect (mostly due to a positive performance of AstraZeneca PLC).


| Name Level 1 2 | Rescaled Weights % | | | Return % | | | Contribution to Return % | | | Attribution Effect | | |
|----------------------------|--------------------|-----------|--------|-----------|-----------|--------|--------------------------|-----------|--------|--------------------------------|-------------|-------------|
| | Portfolio | Benchmark | +/- | Portfolio | Benchmark | +/- | Portfolio | Benchmark | +/- | Morningstar Sector Weighting % | Selection % | Active Ret% |
| ▼ Healthcare | 12.03 | 9.20 | 2.83 | (0.60) | 12.57 | (13.1) | (0.07) | 1.09 | (1.16) | 0.34 | (1.55) | (1.21) |
| Abcam PLC | 2.40 | 0.00 | 2.40 | (22.32) | | | (0.60) | 0.00 | (0.60) | | (0.92) | (0.92) |
| Dechra Pharmaceuticals PLC | 2.65 | 0.13 | 2.53 | 0.80 | 0.80 | 0.00 | 0.02 | 0.00 | 0.02 | | (0.28) | (0.28) |
| Novo Nordisk A/S B | 3.07 | 0.00 | 3.07 | 4.95 | | | 0.15 | 0.00 | 0.15 | | (0.22) | (0.22) |
| Genus PLC | 1.96 | 0.08 | 1.88 | 5.44 | 5.44 | 0.00 | 0.11 | 0.00 | 0.10 | | (0.13) | (0.13) |
| AstraZeneca PLC | 1.95 | 4.04 | (2.09) | 13.91 | 13.91 | 0.00 | 0.25 | 0.52 | (0.27) | | (0.05) | (0.05) |
| Hikma Pharmaceuticals PLC | 0.00 | 0.12 | (0.12) | | 28.64 | | 0.00 | 0.03 | (0.03) | | (0.02) | (0.02) |
| Smith & Nephew PLC | 0.00 | 0.72 | (0.72) | | 14.90 | | 0.00 | 0.10 | (0.10) | | (0.02) | (0.02) |

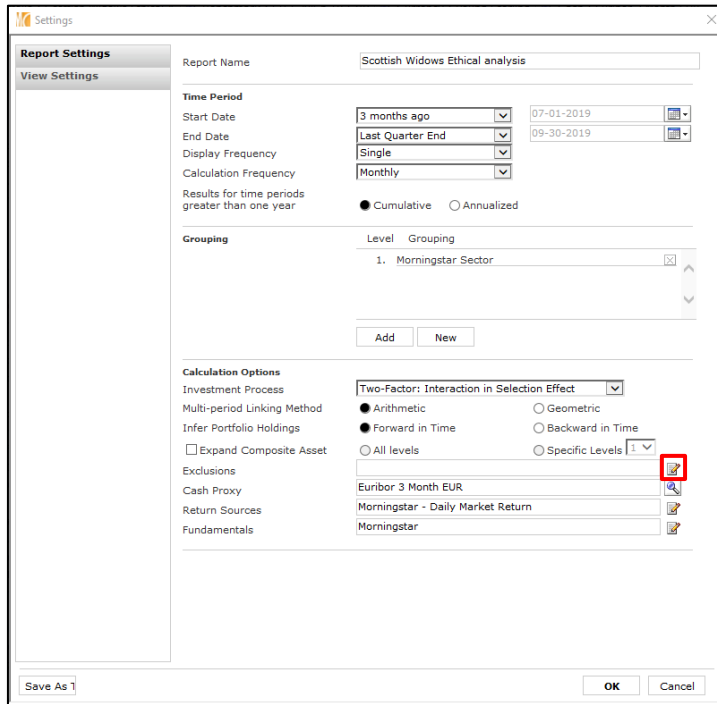
4. We also note the positive Contribution to Return of AstraZeneca PLC: 0.25%.

With Equity Attribution, it is possible to exclude a security from our attribution report to see the effects on our Active Return over the time period analysed if the fund manager hadn't invested in this security.

Exercise 4: Excluding Securities from the Portfolio

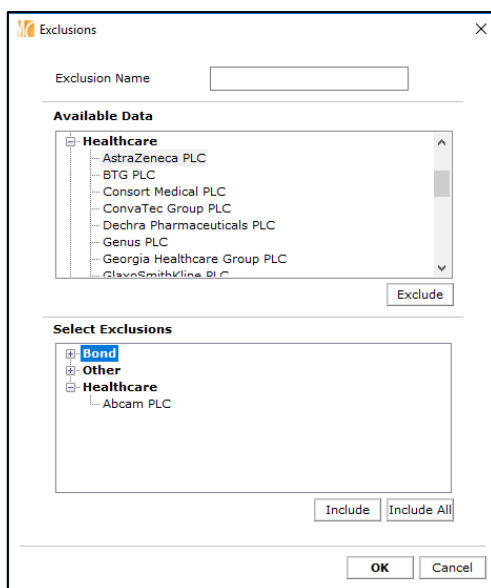
To exclude an underlying position, do the following:

1. From the Toolbar, click **Settings** – Report Settings. The **Settings** dialogue box opens.
2. Click the icon  next to the **Exclusions** field. The **Exclusions** dialogue box opens.



The screenshot shows the 'Settings' dialog box with the 'Report Settings' tab selected. The 'Exclusions' field is highlighted with a red box, and a pencil icon is visible next to it. The 'Exclusions' field is currently empty. The 'Report Name' is 'Scottish Widows Ethical analysis'. The 'Time Period' is set to '3 months ago' with a start date of '07-01-2019' and an end date of '09-30-2019'. The 'Display Frequency' is 'Single' and the 'Calculation Frequency' is 'Monthly'. The 'Results for time periods greater than one year' are set to 'Cumulative'. The 'Grouping' is set to 'Level' and 'Morningstar Sector'. The 'Calculation Options' are set to 'Two-Factor: Interaction in Selection Effect'. The 'Investment Process' is 'Arithmetic'. The 'Multi-period Linking Method' is 'Forward in Time'. The 'Infer Portfolio Holdings' is 'All levels'. The 'Expand Composite Asset' is unchecked. The 'Exclusions' field is empty. The 'Cash Proxy' is 'Euribor 3 Month EUR'. The 'Return Sources' are 'Morningstar - Daily Market Return' and 'Morningstar'.

3. Expand the **Healthcare** sector and select **Abcam PLC**.
4. Click **Exclude** and **OK**.



The screenshot shows the 'Exclusions' dialog box. The 'Exclusion Name' field is empty. The 'Available Data' list is expanded to show the 'Healthcare' sector, and 'Abcam PLC' is selected. The 'Exclude' button is visible. The 'Select Exclusions' list is empty. The 'Include' and 'Include All' buttons are visible. The 'OK' and 'Cancel' buttons are at the bottom.

5. Click **OK** again to return to the attribution report, which will automatically calculate.

We are back on the **Highlights** view.

| Attribution 01/07/2019 - 30/09/2019 | | | | | | | | | | | |
|-------------------------------------|---------------------|--------------|---------------------|---------------|---------------------|-------------|---------------------|-------------|--------------------------------|-------------|-----------------|
| | Weights % | | Rescaled Weights % | | Return % | | Contribution % | | Attribution Effect | | |
| | Portfolio Benchmark | | Portfolio Benchmark | | Portfolio Benchmark | | Portfolio Benchmark | | Morningstar Sector Weighting % | Selection % | Active Return % |
| Basic Materials | 0.00 | 8.95 | 0.00 | 9.13 | (8.03) | 0.00 | (0.77) | 0.89 | 0.00 | 0.89 | |
| Communication Services | 10.12 | 6.82 | 10.28 | 6.96 | 3.59 | 7.09 | 0.36 | 0.48 | 0.18 | (0.34) | (0.16) |
| Consumer Cyclical | 13.68 | 7.56 | 13.89 | 7.72 | 14.74 | 7.18 | 2.07 | 0.54 | 0.39 | 1.00 | 1.39 |
| Consumer Defensive | 1.99 | 14.41 | 2.02 | 14.72 | 3.72 | 3.01 | 0.05 | 0.43 | (0.20) | (0.06) | (0.26) |
| Energy | 1.70 | 14.14 | 1.72 | 14.44 | (13.77) | (5.07) | (0.31) | (0.76) | 0.82 | (0.19) | 0.63 |
| Financial Services | 24.01 | 18.01 | 24.37 | 18.39 | 2.96 | (1.89) | 0.77 | (0.37) | (0.16) | 1.20 | 1.04 |
| Healthcare | 9.72 | 9.06 | 9.87 | 9.20 | 5.66 | 12.57 | 0.54 | 1.09 | 0.08 | (0.64) | (0.56) |
| Industrials | 19.51 | 9.43 | 19.80 | 9.63 | 1.43 | 5.14 | 0.31 | 0.49 | 0.38 | (0.68) | (0.30) |
| Real Estate | 0.00 | 2.14 | 0.00 | 2.18 | | 6.87 | 0.00 | 0.15 | (0.13) | 0.00 | (0.13) |
| Technology | 10.76 | 1.40 | 10.93 | 1.43 | (2.04) | (14.09) | (0.22) | (0.22) | (1.53) | 1.41 | (0.12) |
| Utilities | 2.15 | 2.60 | 2.18 | 2.65 | 5.52 | 6.60 | 0.12 | 0.17 | (0.01) | (0.03) | (0.04) |
| Unclassified | 0.00 | 3.47 | 0.00 | 3.53 | | 0.68 | 0.00 | 0.02 | 0.02 | 0.00 | 0.02 |
| Cash | 4.87 | 0.00 | 4.94 | 0.00 | (1.21) | | (0.07) | 0.00 | (0.05) | 0.00 | (0.05) |
| Attribution Total | 98.52 | 97.98 | 100.00 | 100.00 | 3.62 | 1.27 | 3.62 | 1.27 | 0.69 | 1.66 | 2.35 |

Click **Save** to save your template

We note that:

- ▶ Before excluding the security:
 - The overall Active Return was 1.65%, with an Allocation Effect of 0.96% and a Selection Effect of 0.69%.
 - The Healthcare sector had an Active Return of -1.21%, with an Allocation Effect of 0.34% and a Selection Effect of -1.55%.
- ▶ After excluding this detractor to our portfolio:
 - The overall Active Return is 2.35%, with an Allocation Effect of 0.69% and a Selection Effect of 1.66%.
 - The Healthcare sector has an Active Return of -0.56%, with an Allocation Effect of 0.08% and a Selection Effect of -0.64%

This report takes us back to the Highlights view and this analysis proves that the fund manager would have done a better job by excluding this security from its portfolio.

Let's go back to the Attribution view and look at the information below the Attribution Total.

Exercise 5: Attribution view

- ▶ The report displays a section for any bonds, stocks missing performance, and "other" securities which are not taken into account in the Equity Attribution report.
- ▶ It also now includes the **Excluded** section, where you can see any excluded securities.

| Name Level 1 2 | 7-1-2019 - 9-30-2019 | | | Rescaled Weights % | | | Return % | | | Contribution to Return % | | | Attribution Effect | | |
|-------------------------------|----------------------|---------------|-------------|--------------------|---------------|---------------|-------------|-------------|-------------|--------------------------|-------------|-------------|--------------------------------------|----------------|----------------|
| | Portfolio | Benchmark | +/- | Portfolio | Benchmark | +/- | Portfolio | Benchmark | +/- | Portfolio | Benchmark | +/- | Morningstar Sector Weighting % | Selection % | Active Ret% |
| Basic Materials | 0.00 | 8.95 | (8.95) | 0.00 | 9.13 | (9.13) | | (8.03) | | 0.00 | (0.77) | 0.77 | 0.89 | 0.00 | 0.89 |
| Communication Services | 10.12 | 6.82 | 3.30 | 10.28 | 6.96 | 3.32 | 3.59 | 7.09 | (3.50) | 0.36 | 0.48 | (0.12) | 0.18 | (0.34) | (0.16) |
| Consumer Cyclical | 13.68 | 7.56 | 6.12 | 13.89 | 7.72 | 6.17 | 14.74 | 7.18 | 7.56 | 2.07 | 0.54 | 1.52 | 0.39 | 1.00 | 1.39 |
| Consumer Defensive | 1.99 | 14.41 | (12.43) | 2.02 | 14.72 | (12.70) | 3.72 | 3.01 | 0.71 | 0.05 | 0.43 | (0.39) | (0.20) | (0.06) | (0.26) |
| Energy | 1.70 | 14.14 | (12.44) | 1.72 | 14.44 | (12.72) | (13.77) | (5.07) | (8.70) | (0.31) | (0.76) | 0.45 | 0.82 | (0.19) | 0.63 |
| Financial Services | 24.01 | 18.01 | 6.00 | 24.37 | 18.39 | 5.98 | 2.96 | (1.89) | 4.85 | 0.77 | (0.37) | 1.14 | (0.16) | 1.20 | 1.04 |
| Healthcare | 9.72 | 9.06 | 0.67 | 9.87 | 9.20 | 0.67 | 5.66 | 12.57 | (6.91) | 0.54 | 1.09 | (0.55) | 0.08 | (0.64) | (0.56) |
| Industrials | 19.51 | 9.43 | 10.08 | 19.80 | 9.63 | 10.17 | 1.43 | 5.14 | (3.70) | 0.31 | 0.49 | (0.18) | 0.38 | (0.68) | (0.30) |
| Real Estate | 0.00 | 2.14 | (2.14) | 0.00 | 2.18 | (2.18) | | 6.87 | | 0.00 | 0.15 | (0.15) | (0.13) | 0.00 | (0.13) |
| Technology | 10.76 | 1.40 | 9.36 | 10.93 | 1.43 | 9.50 | (2.04) | (14.09) | 12.05 | (0.22) | (0.22) | (0.01) | (1.53) | 1.41 | (0.12) |
| Utilities | 2.15 | 2.60 | (0.45) | 2.18 | 2.65 | (0.47) | 5.52 | 6.60 | (1.08) | 0.12 | 0.17 | (0.05) | (0.01) | (0.03) | (0.04) |
| Unclassified | 0.00 | 3.47 | (3.47) | 0.00 | 3.53 | (3.53) | | 0.68 | | 0.00 | 0.02 | (0.02) | 0.02 | 0.00 | 0.02 |
| Cash | 4.87 | 0.00 | 4.87 | 4.94 | 0.00 | 4.94 | (1.21) | | | (0.07) | 0.00 | (0.07) | (0.05) | 0.00 | (0.05) |
| Attribution Total | 98.52 | 97.98 | 0.53 | 100.00 | 100.00 | (0.00) | 3.62 | 1.27 | 2.35 | 3.62 | 1.27 | 2.35 | 0.69 | 1.66 | 2.35 |
| Bond | 0.00 | 0.17 | (0.17) | | | | | | | | | | | | |
| Missing Performance | 0.00 | 0.05 | (0.05) | | | | | | | | | | | | |
| Other | 0.00 | 1.80 | (1.80) | | | | | | | | | | | | |
| Excluded | 2.42 | 0.00 | 2.42 | | | | | | | | | | | | |
| Abcam PLC | 2.42 | 0.00 | 2.42 | | | | | | | | | | | | |
| Total | 100.93 | 100.00 | 0.93 | | | | | | | 3.62 | 1.27 | 2.35 | | | |
| Reported Total | | | | | | | 3.17 | 1.27 | 1.89 | | | | | | |
| Residual(Reported - Attrib... | | | | | | | (0.45) | 0.00 | (0.45) | | | | | | |

- ▶ **Reported Total** is the actual return of the investment reported in our database. For a mutual fund equivalent, it is the NAV return. For an index, it is the actual return of the index. This differs from the Attribution Total which is the weighted average returns of the underlying stocks calculated using the beginning of the period weight assuming buy-and-hold. In other words, the Attribution Total is a hypothetical return. This hypothetical return is gross of fees and expenses and assumes buy-and-hold, i.e. no transactions.

The hypothetical return currently assumes dividend reinvestment on ex-date to be consistent with how index returns are calculated, when in reality some portfolios may receive dividends in cash. The hypothetical return also excludes securities that are below the Attribution Total row.

- ▶ **Residual** is the difference between the Reported Total row and the Attribution Total row after accounting for a fund's Expense Ratio. The Residual is an industry standard term that has been around for a long time, but quite often people confuse it with the Interaction term which is the third factor in a three-factor attribution.

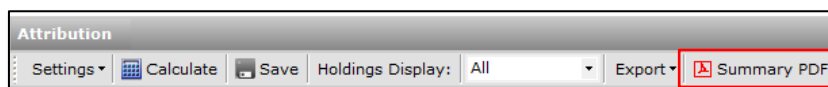
📌 **Note:** For more information on those settings, please refer to [Appendix B: View Settings](#)

Equity Attribution offers a read-made PDF output report, which you can use to communicate the results of your analysis.

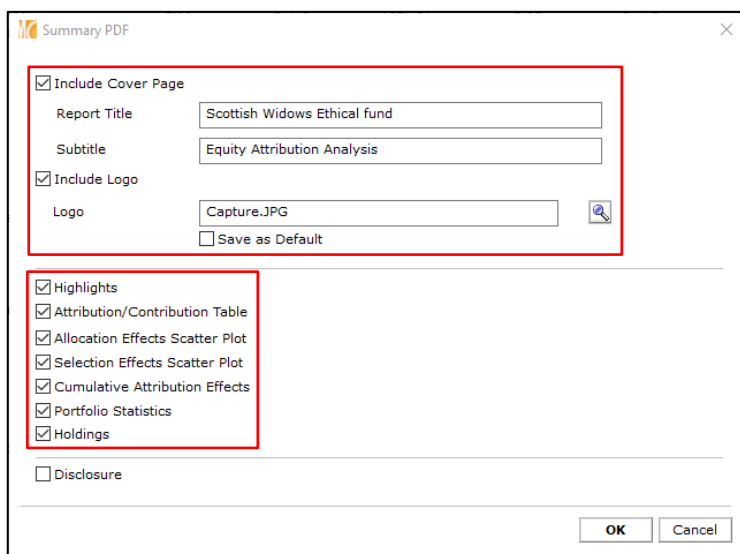
Exercise 6: Generating the Summary PDF report

To generate the report, do the following:

1. From the toolbar, click **Summary PDF**. The **Summary PDF** dialogue box opens on screen.



2. Select the **Include Cover Page** checkbox and set the **Report Title** to **Scottish Widows Ethical fund** and the **Subtitle** to **Equity Attribution Analysis**.
3. Select **Include Logo** and use the magnifying glass to select a picture of your choice.



Note: Additional views from the report can be generated with the report. In this example we selected them all, but in the future, you can decide to keep only those of interest to you.

4. Click **OK** to generate the report.

We will go through some of the pages in this report.

► Highlights

This page visualises the portfolio weights and return relative to the benchmark, the contribution to the return, as well as the Allocation Effect, Selection Effect and Active Return over the chosen time period.



The following page displays the top 5 contributors and bottom 5 detractors, the top and bottom 15 stocks, as well as the top 10 portfolio and benchmark holdings.

| Leading Contributors | | | | Leading Detractors | | | | Exposure | | | |
|-------------------------------------|--------|--------|---------|------------------------------|--------|--------|---------|----------------------------------|--------|--------|--|
| | Weight | Return | Contrib | | Weight | Return | Contrib | | Weight | Return | |
| Consumer Cyclical | 13.89 | 14.74 | 2.07 | Energy | 1.72 | -13.77 | -0.31 | Top 10 Portfolio Holdings | | | |
| Financial Services | 24.37 | 2.96 | 0.77 | Technology | 10.93 | -2.04 | -0.22 | Eurobor 3 Month EUR | 4.87 | -1.21 | |
| Healthcare | 9.87 | 5.66 | 0.54 | Cash | 4.94 | -1.21 | -0.07 | RELX PLC | 4.71 | 1.91 | |
| Communication Services | 10.28 | 3.59 | 0.36 | Consumer Defensive | 2.02 | 3.72 | 0.05 | London Stock Exchange Group PLC | 4.15 | 33.60 | |
| Industrials | 19.80 | 1.43 | 0.31 | Utilities | 2.18 | 5.52 | 0.12 | Prudential PLC | 3.96 | -13.02 | |
| Holdings | | | | Holdings | | | | AVEVA Group PLC | 3.92 | -7.81 | |
| London Stock Exchange Group PLC | 4.22 | 33.60 | 1.24 | Prudential PLC | 4.02 | -13.02 | -0.54 | Rentokil Initial PLC | 3.53 | 18.08 | |
| Beecham Group PLC | 2.63 | 25.32 | 0.62 | Smart Metering Systems PLC | 1.33 | -24.29 | -0.35 | Experian PLC | 3.35 | 9.02 | |
| Rentokil Initial PLC | 3.58 | 18.08 | 0.61 | AVEVA Group PLC | 3.98 | -7.81 | -0.32 | Amadeus IT Group SA A | 3.20 | -5.65 | |
| Bellway PLC | 1.84 | 20.14 | 0.39 | Wood Group (John) PLC | 1.72 | -13.77 | -0.31 | Just Eat PLC | 3.17 | 6.91 | |
| Euronext Institutional Investor PLC | 2.85 | 13.67 | 0.39 | Bodycote PLC | 2.22 | -13.31 | -0.30 | Novo Nordisk A/S B | 3.10 | 4.95 | |
| Experian PLC | 3.40 | 9.02 | 0.30 | Spirax Sarco Engineering PLC | 1.87 | -14.59 | -0.29 | Top 10 Benchmark Holdings | | | |
| Avast PLC | 1.08 | 30.56 | 0.30 | Amadeus IT Group SA A | 3.38 | -5.85 | -0.20 | HSBC Holdings PLC | 5.59 | -3.63 | |
| AstraZeneca PLC | 1.99 | 13.91 | 0.26 | St James's Place PLC | 1.77 | -9.00 | -0.18 | Royal Dutch Shell PLC Class A | 4.72 | -5.78 | |
| InterContinental Hotels Group PLC | 0.83 | 10.58 | 0.26 | Standard Chartered PLC | 2.89 | -3.33 | -0.10 | BP PLC | 4.60 | -4.42 | |
| Melrose Industries PLC | 2.02 | 12.40 | 0.25 | Grafton Group PLC | 1.85 | -4.90 | -0.09 | Royal Dutch Shell PLC B | 4.04 | -5.61 | |
| Countryside Properties PLC | 1.83 | 12.60 | 0.25 | Eurobor 3 Month EUR | 4.94 | -1.21 | -0.07 | AstraZeneca PLC | 3.96 | 13.91 | |
| Howden Joinery Group PLC | 2.35 | 10.53 | 0.24 | Hiscox Ltd | 1.86 | -1.19 | -0.02 | GlaxoSmithKline PLC | 3.54 | 11.82 | |
| Compass Group PLC | 2.13 | 10.92 | 0.22 | Devo PLC | 0.65 | -0.97 | -0.02 | Diageo PLC | 3.50 | -0.26 | |
| Just Eat PLC | 3.22 | 6.91 | 0.20 | Ashmore Group PLC | 2.61 | -0.89 | -0.01 | British American Tobacco PLC | 2.94 | 9.40 | |
| Electrocomponents PLC | 1.43 | 5.78 | 0.16 | Close Brothers Group PLC | 2.43 | -0.35 | -0.01 | Unilever PLC | 2.37 | 0.66 | |
| | | | | | | | | Rio Tinto PLC | 2.19 | -10.17 | |

► Attribution Allocation Effects

This page provides a summary of the Attribution view.

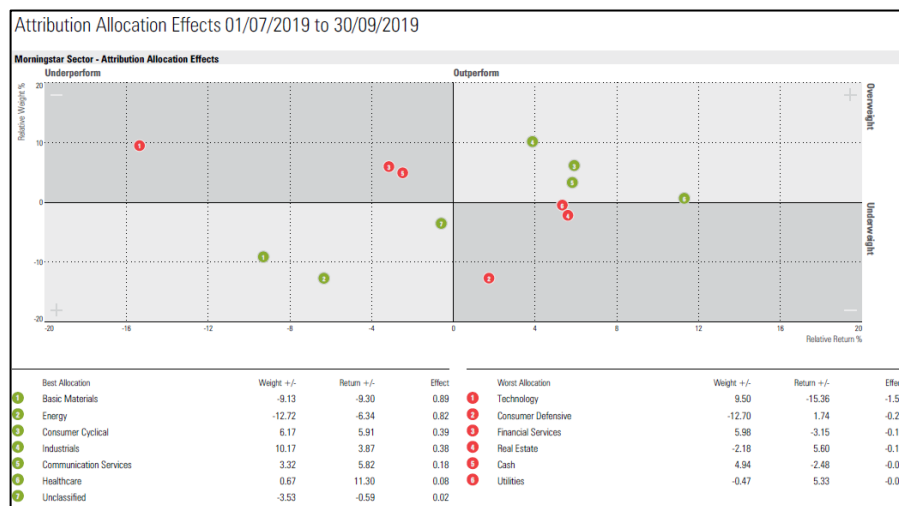
| Morningstar Sector | Weights % | | | Rescaled Weights % | | | Return % | | | Contribution % | | | Attribution Effects % | | |
|---|---------------|---------------|-------------|--------------------|---------------|-------------|--------------|-------------|--------------|----------------|-------------|-------------|------------------------------|-------------|---------------|
| | | | | | | | | | | | | | | | |
| | Portfolio | Benchmark | +/- | Portfolio | Benchmark | +/- | Portfolio | Benchmark | +/- | Portfolio | Benchmark | +/- | Morningstar Sector Weighting | Selection | Active Return |
| Basic Materials | 0.00 | 8.95 | -8.95 | 0.00 | 9.13 | -9.13 | — | -8.03 | — | 0.00 | -0.77 | 0.77 | 0.89 | 0.00 | 0.89 |
| Communication Services | 10.12 | 6.82 | 3.30 | 10.28 | 6.96 | 3.32 | 3.59 | 7.09 | -3.50 | 0.36 | 0.48 | -0.12 | 0.18 | -0.34 | -0.16 |
| Consumer Cyclical | 13.68 | 7.56 | 6.12 | 13.89 | 7.72 | 6.17 | 14.74 | 7.18 | 7.56 | 2.07 | 0.54 | 1.52 | 0.39 | 1.00 | 1.39 |
| Consumer Defensive | 1.99 | 14.41 | -12.43 | 2.02 | 14.72 | -12.70 | 3.72 | 3.01 | 0.71 | 0.05 | 0.43 | -0.39 | -0.20 | -0.06 | -0.26 |
| Energy | 1.70 | 14.14 | -12.44 | 1.72 | 14.44 | -12.72 | -13.77 | -5.07 | -8.70 | -0.31 | -0.76 | 0.45 | 0.82 | -0.19 | 0.63 |
| Financial Services | 24.01 | 18.01 | 6.00 | 24.37 | 18.39 | 5.98 | 2.96 | -1.89 | 4.85 | 0.77 | -0.37 | 1.14 | -0.16 | 1.20 | 1.04 |
| Healthcare | 9.72 | 9.06 | 0.67 | 9.87 | 9.20 | 0.67 | 5.66 | 12.57 | -6.91 | 0.54 | 1.09 | -0.55 | 0.08 | -0.64 | -0.56 |
| Industrials | 19.51 | 9.43 | 10.08 | 19.80 | 9.63 | 10.17 | 1.43 | 5.14 | -3.70 | 0.31 | 0.49 | -0.18 | 0.38 | -0.68 | -0.30 |
| Real Estate | 0.00 | 2.14 | -2.14 | 0.00 | 2.18 | -2.18 | — | 6.87 | — | 0.00 | 0.15 | -0.15 | -0.13 | 0.00 | -0.13 |
| Technology | 10.76 | 1.40 | 9.36 | 10.93 | 1.43 | 9.50 | -2.04 | -14.09 | 12.05 | -0.22 | -0.22 | -0.01 | -1.53 | 1.41 | -0.12 |
| Utilities | 2.15 | 2.60 | -0.45 | 2.18 | 2.65 | -0.47 | 5.52 | 6.60 | -1.08 | 0.12 | 0.17 | -0.05 | -0.01 | -0.03 | -0.04 |
| Unclassified | 0.00 | 3.47 | -3.47 | 0.00 | 3.53 | -3.53 | — | 0.68 | — | 0.00 | 0.02 | -0.02 | 0.02 | 0.00 | 0.02 |
| Cash | 4.87 | 0.00 | 4.87 | 4.94 | 0.00 | 4.94 | -1.21 | — | — | -0.07 | 0.00 | -0.07 | -0.05 | 0.00 | -0.05 |
| Attribution Total | 98.52 | 97.98 | 0.53 | 100.00 | 100.00 | 0.00 | 3.62 | 1.27 | 2.35 | 3.62 | 1.27 | 2.35 | 0.69 | 1.66 | 2.35 |
| Bond | 0.00 | 0.17 | -0.17 | — | — | — | — | — | — | — | — | — | — | — | — |
| Excluded | 2.42 | 0.00 | 2.42 | — | — | — | — | — | — | — | — | — | — | — | — |
| Missing Performance | 0.00 | 0.05 | -0.05 | — | — | — | — | — | — | — | — | — | — | — | — |
| Other | 0.00 | 1.80 | -1.80 | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | 100.93 | 100.00 | 0.93 | — | — | — | — | — | — | 3.62 | 1.27 | 2.35 | — | — | — |
| Reported Total | — | — | — | — | — | — | 3.17 | 1.27 | 1.89 | — | — | — | — | — | — |
| Residual(Reported - Attribution Total) | — | — | — | — | — | — | -0.45 | 0.00 | -0.45 | — | — | — | — | — | — |

► Attribution Allocation Effect

This page visualises the out- and under-performance as well as the over- and under-weighting of the selected portfolio breakdown (sectors in this instance) against the benchmark.

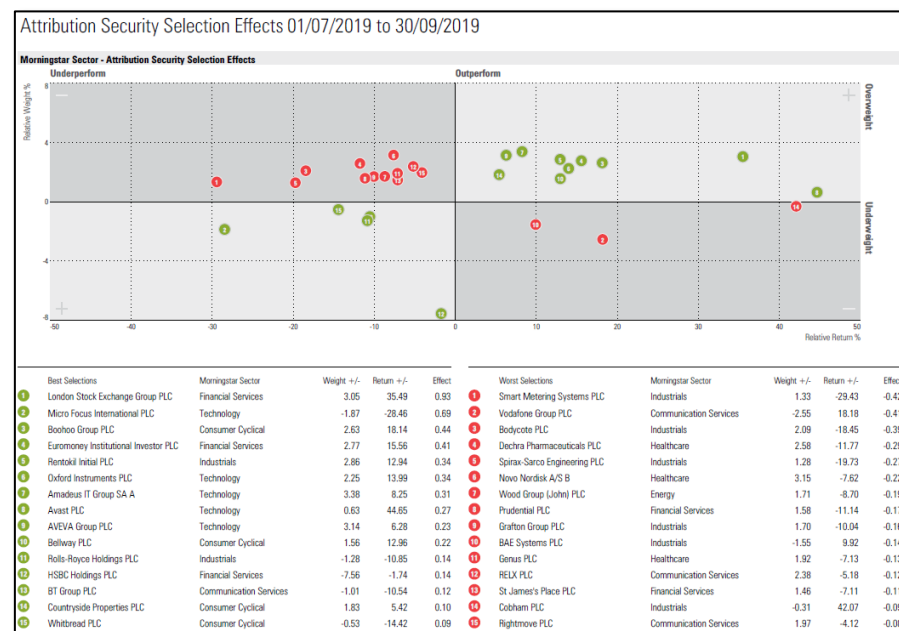
The best allocation is on sectors that out-perform and are over-weighted, or that are under-weighted and under-performing.

The worst allocation is on sectors that out-perform but are under-weighted, or that under-perform and over-weighted.



► Attribution Security Selection Effects

This page visualises the same information as in the afore mentioned page, but with the top and bottom 15 stocks.



You also have the possibility to create an Equity attribution analysis report using a Presentation Studio Morningstar template. This report can then be saved and added to one of your batches for update automation.

Exercise 7: Creating an Equity Attribution report in Presentation Studio

To create a report from an existing Morningstar template, do the following:

1. From Morningstar Direct, click on Presentation Studio on the left navigation panel. Presentation Studio opens in a separate window.
2. Click on **Morningstar Templates**, then expand the **Factsheets** section.
3. Double click on the **Equity Attribution Detail** template. The **Investments: Settings** dialogue box opens.
4. Click on the magnifying glass to access the **My Fund Selection** Investment List select **Scottish Widows Ethical A** (or any other equity fund of your choice) and click **OK**.
5. Using the drop-down menu for the first benchmark, select the **Primary Prospectus Benchmark** option (or any other option of your choice).
6. Change the fund's colour to another one of your choice and click **OK** to generate the report.

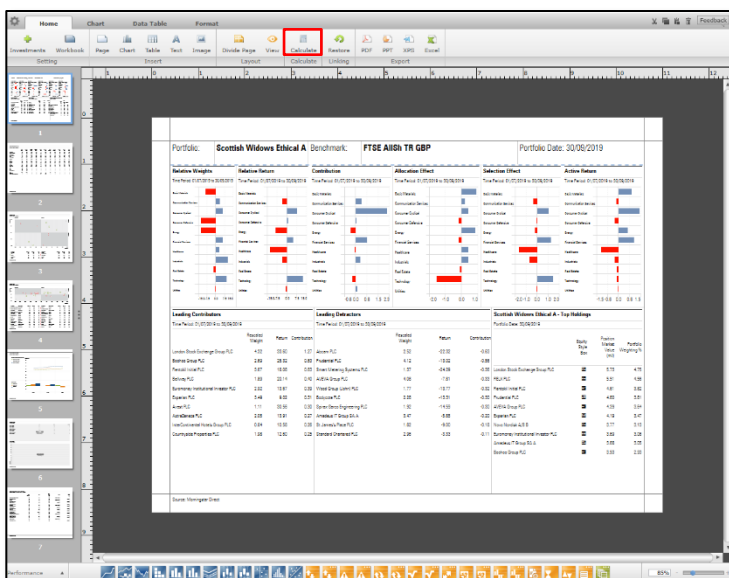
Make your selection

7. Go to the **Home** tab – **Workbook**. On the **Data** tab, change the currency to **Euro** (or any other preferred currency).
8. Set the dates to **3 Months Ago** from **Last Quarter End**.
9. Under **Return Series**, switch from **Monthly Return** to **Weekly Return**.

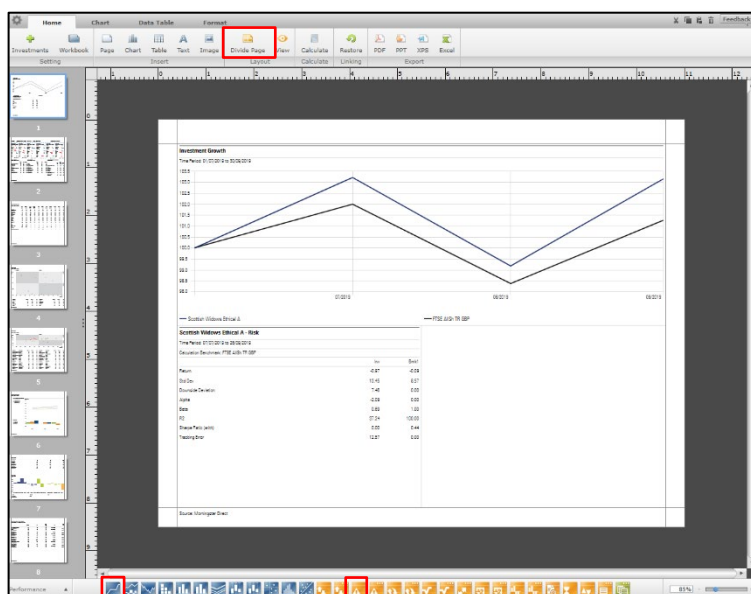
Set your time period and currency

Click on the **Attribution** tab. From there, you can set your preferred **Grouping** (the default being Morningstar Sector), and **Investment Process** amongst other things.

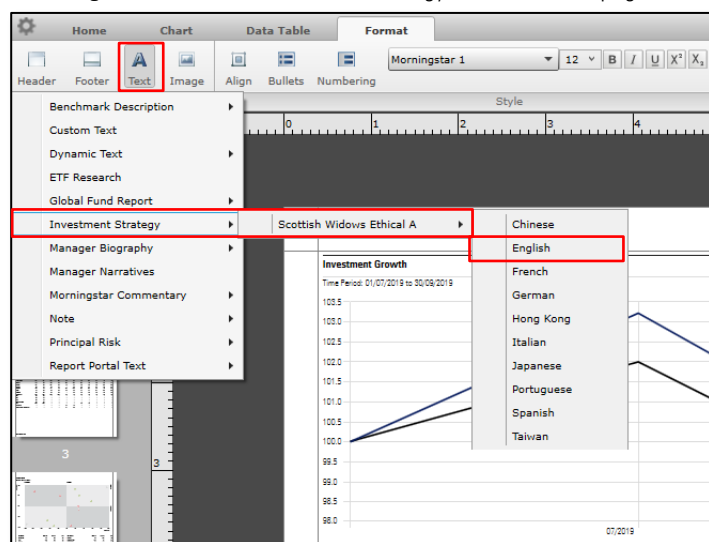
Note: For more information on the Investment Process, please refer to [Appendix A: Investment Process](#)



10. From the **toolbar**, click **Calculate – Workbook** to calculate all components.
11. From the left navigation page, right-click on the 1st page and click **New**. A blank page is inserted below the 1st page.
12. Drag the 1st page down, so that our blank page is becomes the 1st page of the report.
13. Using the **Divide Page** Toolbar icon, select the 1st page and divide it horizontally in 2 sections.
14. Add the **Multiple Investments Growth Chart** to the top section, and the **Risk – Single Investment** table at the bottom.
15. Using the **Divide Page** Toolbar icon, divide the bottom section into 2 vertical sections and select the bottom-right empty box.

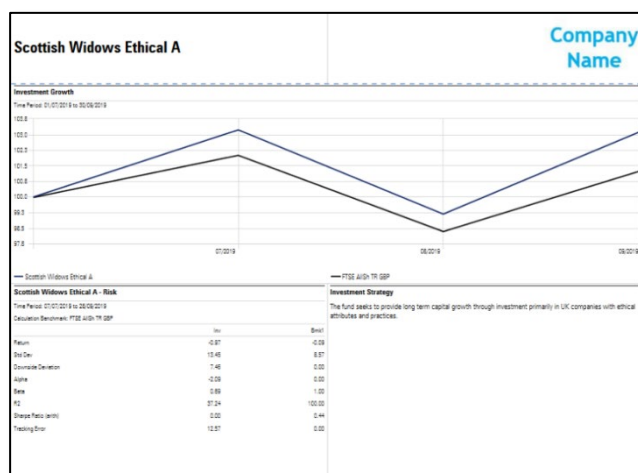


- From the Toolbar, click **Text – Investment Strategy** – click on the fund name – click on **English**. The fund's investment strategy is added to the page.



We now want to insert a Header.

- Click the **Format** tab and select **Header – Insert Header**. A blank space appears at the top of the page.
- Using **Divide Page**, divide the Header into 2 sections (vertical split).
- Select the left section and click on **Text – Dynamic Text – Investment Name** and click on the fund's name. The fund's name will automatically be added to the Header space.
- You may format the text in the font format and size of your choice.
- Select the right space and click on **Image – Insert Image**. You can then navigate on your computer to select an image of your choice (such as your company logo).
- To apply this header to the entire report, go to the **Header tab – Header – Apply Header to Workbook**.



You may now save your Workbook as a report and eventually as your own template, reader to be used with other funds