# Configuring the Archer Insight Use Case

Complete the following tasks to configure the use case.

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## Review required fields

Archer Insight requires certain Archer fields in order to work correctly. Do not modify the properties of these fields except as instructed in this topic.

For a complete list of the fields, see [Insight Fields in Archer](insight_fields.htm).

## Set up your utility scale

### What is the utility scale?

Risks can have both financial and non-financial impacts. While consequences with financial impacts can be added and compared, those with non-financial impacts are more difficult.

A utility scale allows you to define impact levels (how big or small the impact is) across all impact types. This allows you to map economic equivalents to non-financial impacts and then aggregate all impact types for your *total* impact.

Out of the box, Insight provides a utility scale with 12 levels. For each non-financial impact type, a level 1 impact is your smallest impact and a level 12 impact is your worst-case potential impact. You can customize the number of levels, if needed.

In Archer, your utility scale is controlled by two things:

1. A single record in the Corporate Global Variables application, in which you set the number of impact levels and the economic equivalents for the top and bottom levels.
2. Records in the Utility Scale application, in which you define, for each impact type, what constitutes an impact for each level. For example, what constitutes a level 3 reputation impact.

On both the dashboard and in assessments, Insight allows you to view *total* impacts, meanings those for financial and non-financial consequences combined. Total impacts are reported in the utility scale. The system adds the economic equivalent of each consequence and converts the sum to the utility scale.

### (Optional) Customize the number of levels

In the Insight: NonFinancial Impact Levels global values list, add or remove values until you have the number of levels that you want.

**Important:** The numeric values must be whole, continuous integers, 1-*n* and the text values should match the numeric values.

### Task 1: Populate the Corporate Global Variables application

1. In the Corporate Global Variables application, create a new record.
2. In the Utility Scale section, enter the following:
   * # of Impact Levels: the number of levels in your utility scale.
   * **Important:** If this number anything other than 12, you must have completed the steps in [Customize the number of levels](#X098abf2f3af223f4a13473063ac3e213fa516d9). This number is used as the highest number than can be used for level reduction of non-financial consequence. It also defines how many level descriptions will be shown in the assessment screens.
   * Economic Equivalent of Level 1: The economic equivalent for level 1.
   * Economic Equivalent of the Top Most Level for Actual Non-financial Impact Level. It is not setting the maximum impact level or economic impact that can occur.
3. Save the record.
4. Based on the economic equivalents you entered, the system calculates the Level Ratio field. This field is then used to set the economic equivalent of any utility level.

### Task 2: Populate the Utility Scale application

1. In the Utility Scale application, create a new record for twice the number of impact levels that you set in the Corporate Global Variables application. This allows the inherent impact to be up to twice the number of impact levels.

* For example, if the number of impact levels is 6, then the highest inherent impact level for each impact category should be 12. If you are using 6 levels and 5 non-financial impact types (environmental, health and safety, reputation, social, and sustainability), you would need to create 60 records.

1. In each record, select the impact type, impact level, and provide a description.
2. Only the descriptions for records 1 to the # of Impact levels will be shown in the assessment screens.
3. Save the record.
4. The Economic Equivalent field is calculated using the level ratio from the Corporate Global Variables record that you created in task 1.

## Set up Insight UI settings

In the Corporate Global Variables application, there are additional settings you can configure that control the Insight UI.

1. In the Corporate Global Variables application, open your record.
2. In the Heat Map Contour Colors section, set your upper limit thresholds for the green and yellow sections on [the heat map on the Insight dashboard](insight_dashboard.htm#Economic). These settings allow you to control where the transitions from the green to yellow and yellow to red sections fall on the chart.

* **Note:** The upper limit threshold for the red section in the heat map is inherited from the Economic Equivalent of Top Most Level field that you set in [Populate the Corporate Global Variables application](#Populate2).

1. In the Insight Settings - UI section, do the following:
   1. Define the currency symbol that you want used throughout the Insight UI for all economic values.
   2. Set your VaR/CVaR preference. This setting determines at what level the Insight UI will display VaR and CVaR values. For example, if you select 5%, the assessment forms and dashboard display value at risk at 5% and conditional value at risk at 5% values.

## Set up multiple hierarchies

### What are multiple hierarchies?

Previously, all risks had to be associated with a business unit, which is part of an organizational hierarchy (often, Company > Division > Business Unit).

Multiple hierarchies, introduced in Archer Insight 6.13.0.1, allow you to place risks and consequences in more than one context at a time. For example, the risk of a hurricane might be owned by the Finance level of your Risk Hierarchy structure, whereas in your Operational hierarchy structure, the risk is owned by a specific region. The consequences of your risks can then also be placed into additional contexts, depending on the entities that are impacted when the consequence occurs.

Multiple hierarchies allow your risks and consequences to be aggregated in different ways [on the dashboard](insight_dashboard.htm).

Insight provides support for the following hierarchies by default:

* Organizational (Company > Division > Business Unit)
* Product and Services
* Risk Hierarchy (Enterprise Risk > Intermediate Risk > Risk Statement)
* Applications
* Facilities
* Business Processes

You can also [create your own](#X23f8d88ef3220a8270e4a454075ba65461c8bed) hierarchies.

### How hierarchies work

A hierarchy has four requirements:

1. Each application included in a hierarchy must be linked with a reference field. This field must have Maximum Selections set to 1.
2. For each application included in a hierarchy, the ID, name, and description fields must have their alias values set according to the model in [Task 3: Configure out-of-the-box hierarchies.](#Task)
3. Each hierarchy is then created from a base report which can include the following:
   * Multiple applications, where the order that the application was added in Advanced Search defines a parent/child relationship
   * Leveled applications, where the levels define the parent/child relationship.
   * Internal references, if you select the Directional Search option.
   * **Note:** If the application with the internal reference is not at the top of the hierarchy, see the section [Using applications with internal references other than at the top of a hierarchy](#Using) below.

* **Important:** Hierarchy reports are named with the prefix: #InsightHierarchy. The rest of the report name is used to identify the hierarchy in the Archer Insight dashboard.

1. Risks and consequences are assigned to hierarchies using MRDC fields in the Risks and Insight Consequences applications. You can also assign consequences to hierarchies in Archer Insight. For these fields, the Alias field must be unique and follow the format "Hierarchy\_*xx*", where xx is a number between 01 and 99.

* **Note:** Risk events are only tied to risks, and each risk event can only be tied to one risk.

### Additional rules

* Applications should only be assigned to a single hierarchy. For example, the Business Unit application should not be included in both the Organizational and Risk Hierarchy hierarchies.
* Records can only belong to a single parent in a single hierarchy. For example, a single Business Unit record can't belong to multiple Divisions. This should be enforced by selecting "Allow users to select one only reference" in the MRDC field configuration.

### Using an application with internal references other than at the top of a hierarchy

To use an application with internal references in a place other than at the top of the hierarchy (that is, the first application in the search), you must create a pair of two reports. The first report contains the hierarchy up to the application with the internal reference, and the second report contains the remaining hierarchy, starting with the app with the internal reference. The second report can also have additional regular references.

**Important:** You can only have a single set of linked reports (2 reports total).

The second report must meet the following requirements:

* This report must be named #InsightHierarchyAdd at the beginning.
* The top node of the report must be the bottom node of the first report.
* The report must have Directional Search enabled.
* If you need to add applications or levels to the app with the internal reference, do the following:
  + Add the relationship to the second occurrence of the internal ref app. The relationship must follow the same direction as the internal reference.
    - Downward additional references must be through a cross-reference
    - Upward additional references must be through a related records.

For example, say you have a Business Processes application with an internal reference to create "parent" processes and sub-processes.

The following table shows the reports that would you need to create.

|  | Report 1 | Report 2 |
| --- | --- | --- |
| Report Name | #InsightHierarchy Organizational | #InsightHierarchyAdd Organizational |
| Path | Company > Division > Business Unit > Business Processes (parent process) | Business Processes (parent process) > Business Processes (sub-process) |

**Note:** As with all hierarchy reports, records can only belong to a single parent in a single hierarchy. So depending on your data structure, you might need to add a filter to Report 1 to only return the "parent" records in that application.

### Task 1: Configure out-of-the-box hierarchies

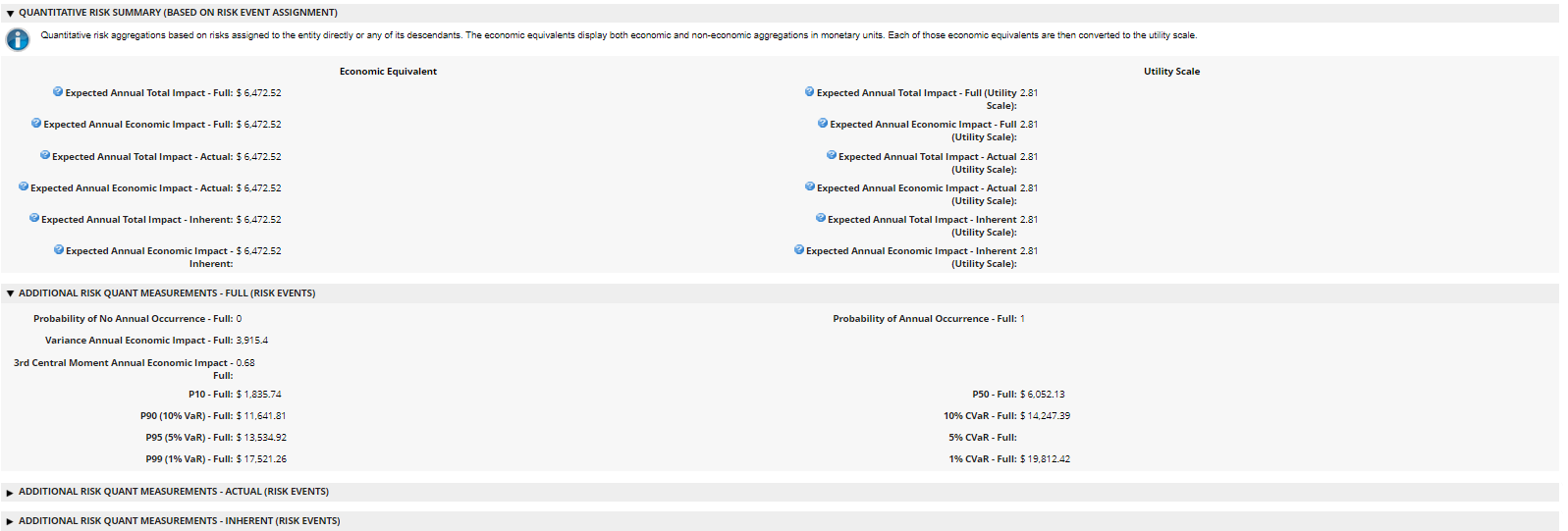
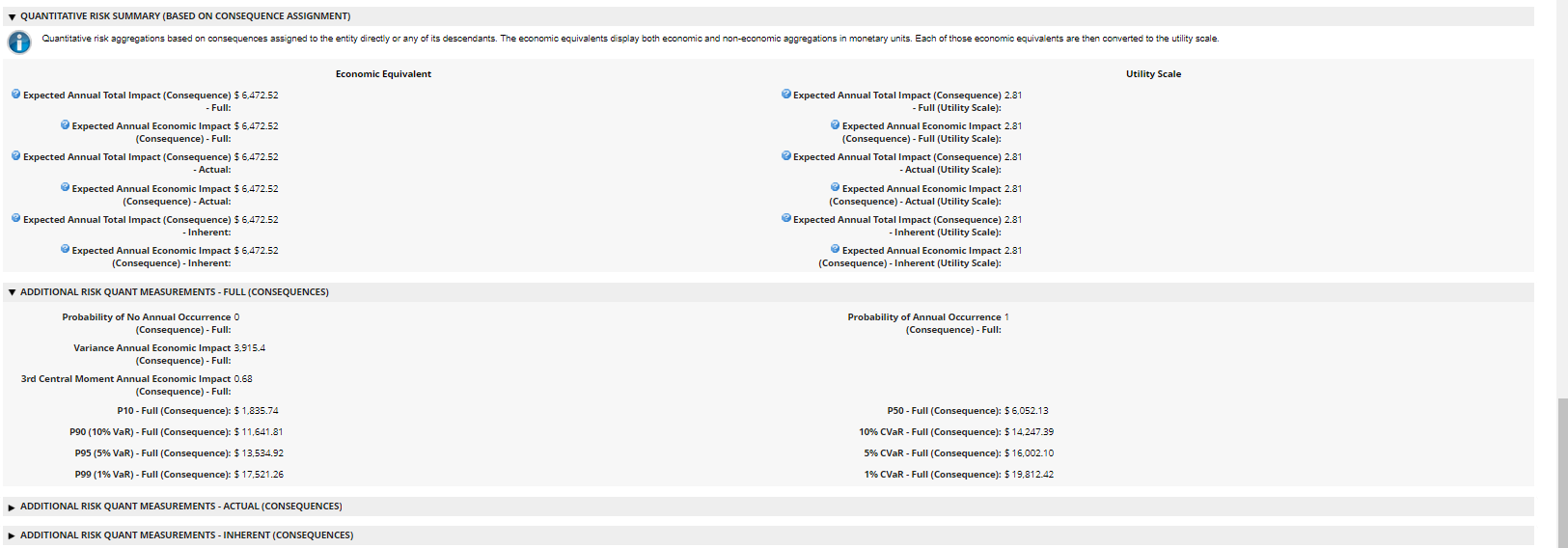
To use the out-of-the-box hierarchies, update the alias values for the following fields.

The following table describes the fields.

| Report Name | Application | Field | Alias needed for Insight |
| --- | --- | --- | --- |
| #InsightHierarchy Organizational | Company | Tracking ID | UID |
|  |  | Company | Entity\_Name |
|  |  | Company Description | Entity\_Description |
|  | Division | Tracking ID | UID |
|  |  | Division | Entity\_Name |
|  |  | Description | Entity\_Description |
|  | Business Unit | Tracking ID | UID |
|  |  | Business Unit | Entity\_Name |
|  |  | Description | Entity\_Description |
| #InsightHierarchy Product and Services | Products and Services | Product ID | UID |
|  |  | Product/Service Name | Entity\_Name |
|  |  | Description | Entity\_Description |
| #InsightHierarchy Risk Hierarchy | Enterprise Risk | Tracking ID | UID |
|  |  | Name | Entity\_Name |
|  |  | Description | Entity\_Description |
|  | Intermediate Risk | Tracking ID | UID |
|  |  | Name | Entity\_Name |
|  |  | Description | Entity\_Description |
|  | Risk Statements | Risk ID | UID |
|  |  | Risk Name | Entity\_Name |
|  |  | Description | Entity\_Description |
| N/A  **Note:** Risks is at the bottom of every hierarchy. It is the only application/level that can belong to multiple hierarchies but it should not be put into any of the base hierarchy reports. | Risks | Risk ID | UID |
|  |  | Risk | Entity\_Name |
|  |  | Description | Entity\_Description |
| #InsightHierarchy Applications | Application | Application ID | UID |
|  |  | Application Name | Entity\_Name |
|  |  | Description | Entity\_Description |
| #InsightHierarchy Facilities | Facilities | Facility ID | UID |
|  |  | Facility Name | Entity\_Name |
|  |  | Description | Entity\_Description |
| #InsightHierarchy Business Processes | Business Processes | Process ID | UID |
|  |  | Process Name | Entity\_Name |
|  |  | Description | Entity\_Description |

### (Optional) Create your own hierarchy

1. Create a new report with your hierarchy structure.
   * Each application included in a hierarchy must be linked with a reference field. This field must have Maximum Selections set to 1.
   * The report must be named with the prefix #InsightHierarchy.
   * The fields that you include in the Advanced Search must follow the alias naming standards above.
2. In the Risks and Insight Consequences applications, create MRDC fields for hierarchy assignment.
   * For these fields, the Alias field must be unique and follow the format "Hierarchy\_*xx*", where *xx* is a number between 01 and 99. The MRDC field names are also displayed in Archer Insight so they should be named similarly to the report name for the hierarchy.
   * In the Configuration section, add the references to the same applications and levels in the hierarchy that are used in the associated hierarchy report and ensure "Allow users to select only one reference" is selected.
3. (Optional) Create fields for entity aggregation. These fields are used to capture expected losses (coming from Archer Insight) for risks and consequences at each level of your hierarchy. The following images show an example.

* 
* 
* **Note:** These fields should not be referenced in Archer calculations or statistic report aggregations.
* For each level of your hierarchy, create the following fields:

| Section | Field | Alias |
| --- | --- | --- |
| Quantitative Risk Summary (Based on Risk Assignment) > Economic Equivalent | Expected Annual Total Impact - Full | Expected\_Annual\_Total\_Impact\_Full |
| Expected Annual Economic Impact - Full | Expected\_Annual\_Econ\_Impact\_Full |
| Expected Annual Total Impact - Actual | Expected\_Annual\_Total\_Impact\_Actual |
| Expected Annual Economic Impact - Actual | Expected\_Value\_Annual\_Econ\_Actual |
| Expected Annual Total Impact - Inherent | Expected\_Annual\_Total\_Impact\_Inherent |
| Expected Annual Economic Impact - Inherent | Expected\_Annual\_Total\_Impact\_Actual |
| Quantitative Risk Summary (Based on Risk Assignment) > Utility Scale | Expected Annual Total Impact - Full (Utility Scale) | Expected\_Annual\_Total\_Impact\_Full\_Util |
| Expected Annual Economic Impact - Full (Utility Scale) | Expected\_Annual\_Econ\_Impact\_Full\_Util |
| Expected Annual Total Impact - Actual (Utility Scale) | Expected\_Annual\_Total\_Impact\_Actual\_Util |
| Expected Annual Economic Impact - Actual (Utility Scale) | Expected\_Annual\_Econ\_Impact\_Actual\_Util |
| Expected Annual Total Impact - Inherent (Utility Scale) | Expected\_Annual\_Totl\_Impct\_Inherent\_Util |
| Expected Annual Economic Impact - Inherent (Utility Scale) | Expected\_Annual\_Econ\_Impct\_Inherent\_Util |
| Additional Risk Quant Measurements - Full (Risk Events) | Probability of No Annual Occurrence - Full | Probability\_No\_Annual\_Occurrence\_Full |
| Probability of Annual Occurrence - Full | Probability\_of\_Annual\_Occurrence\_Full |
| Standard Deviation Annual Economic Impact - Full | Variance\_Annual\_Econ\_Full |
| Skewness Annual Economic Impact - Full | Skewness\_Annual\_Econ\_Full |
| P10 - Full | P10\_Full |
| P90 (10% VaR) - Full | P90\_10\_Perc\_VaR\_Full |
| P95 (5% VaR) - Full | P95\_5\_Perc\_VaR\_Full |
| P99 (1% VaR) - Full | P99\_1\_Perc\_VaR\_Full |
| P50 - Full | P50\_Full |
| 10% CVaR - Full | \_10\_Perc\_CVaR\_Full |
| 5% CVaR - Full | \_5\_Perc\_CVaR\_Full |
| 1% CVaR - Full | \_1\_Perc\_CVaR\_Full |
| Additional Risk Quant Measurements - Actual (Risk Events) | Probability of No Annual Occurrence - Actual | Probability\_No\_Annual\_Occurrence\_Actual |
| Probability of Annual Occurrence - Actual | Probability\_of\_Annual\_Occurrence\_Actual |
| Standard Deviation Annual Economic Impact - Actual | Variance\_Annual\_Econ\_Actual |
| Skewness Annual Economic Impact - Actual | Skewness\_Annual\_Econ\_Actual |
| P10 - Actual | P10\_Actual |
| P90 (10% VaR) - Actual | P90\_10\_Perc\_VaR\_Actual |
| P95 (5% VaR) - Actual | P95\_5\_Perc\_VaR\_Actual |
| P99 (1% VaR) - Actual | P99\_1\_Perc\_VaR\_Actual |
| P50 - Actual | P50\_Actual |
| 10% CVaR - Actual | \_10\_Perc\_CVaR\_Actual |
| 5% CVaR - Actual | \_5\_Perc\_CVaR\_Actual |
| 1% CVaR - Actual | \_1\_Perc\_CVaR\_Actual |
| Additional Risk Quant Measurements - Inherent (Risk Events) | Probability of No Annual Occurrence - Inherent | Prob\_No\_Annual\_Occurrence\_Inherent |
| Probability of Annual Occurrence - Inherent | Prob\_of\_Annual\_Occurrence\_Inherent |
| Standard Deviation Annual Economic Impact - Inherent | Variance\_Annual\_Econ\_Inherent |
| Skewness Annual Economic Impact - Inherent | Skewness\_Annual\_Econ\_Inherent |
| P10 - Inherent | P10\_Inherent |
| P90 (10% VaR) - Inherent | P90\_10\_Perc\_VaR\_Inherent |
| P95 (5% VaR) - Inherent | P95\_5\_Perc\_VaR\_Inherent |
| P99 (1% VaR) - Inherent | P99\_1\_Perc\_VaR\_Inherent |
| P50 - Inherent | P50\_Inherent |
| 10% CVaR - Inherent | \_10\_Perc\_CVaR\_Inherent |
| 5% CVaR - Inherent | \_5\_Perc\_CVaR\_Inherent |
| 1% CVaR - Inherent | \_1\_Perc\_CVaR\_Inherent |
| Quantitative Risk Summary (Based on Consequence Assignment) > Economic Equivalent | Expected Annual Total Impact (Consequence) - Full | Expected\_Annual\_Total\_Conseq\_Full |
| Expected Annual Economic Impact (Consequence) - Full | Expected\_Annual\_Econ\_Conseq\_Full |
| Expected Annual Total Impact (Consequence) - Actual | Expected\_Annual\_Total\_Conseq\_Actual |
| Expected Annual Economic Impact (Consequence) - Actual | Expected\_Annual\_Econ\_Conseq\_Actual |
| Expected Annual Total Impact (Consequence) - Inherent | Expected\_Annual\_Total\_Conseq\_Inherent |
| Expected Annual Economic Impact (Consequence) - Inherent | Expected\_Annual\_Econ\_Conseq\_Inherent |
| Quantitative Risk Summary (Based on Consequence Assignment) > Utility Scale | Expected Annual Total Impact (Consequence) - Full (Utility Scale) | Expected\_Annual\_Total\_Conseq\_Full\_Util |
| Expected Annual Economic Impact (Consequence) - Full (Utility Scale) | Expected\_Annual\_Econ\_Conseq\_Full\_Util |
| Expected Annual Total Impact (Consequence) - Actual (Utility Scale) | Expected\_Annual\_Total\_Conseq\_Actual\_Util |
| Expected Annual Economic Impact (Consequence) - Actual (Utility Scale) | Expected\_Annual\_Econ\_Conseq\_Actual\_Util |
| Expected Annual Total Impact (Consequence) - Inherent (Utility Scale) | Expect\_Annual\_Totl\_Conseq\_Inherent\_Util |
| Expected Annual Economic Impact (Consequence) - Inherent (Utility Scale) | Expect\_Annual\_Econ\_Conseq\_Inherent\_Util |
| Additional Risk Quant Measurements - Full (Consequences) | Probability of No Annual Occurrence (Consequence) - Full | Prob\_No\_Annual\_Occurrence\_Conseq\_Full |
| Probability of Annual Occurrence (Consequence) - Full | Prob\_of\_Annual\_Occurrence\_Conseq\_Full |
| Standard Deviation Annual Economic Impact (Consequence) - Full | Variance\_Annual\_Econ\_Conseq\_Full |
| Skewness Annual Economic Impact (Consequence) - Full | Skewness\_Annual\_Econ\_Conseq\_Full |
| P10 - Full (Consequence) | P10\_Full\_Conseq |
| P90 (10% VaR) - Full (Consequence) | P90\_10\_Perc\_VaR\_Full\_Conseq |
| P95 (5% VaR) - Full (Consequence) | P95\_5\_Perc\_VaR\_Full\_Conseq |
| P99 (1% VaR) - Full (Consequence) | P99\_1\_Perc\_VaR\_Full\_Conseq |
| P50 - Full (Consequence) | P50\_Full\_Conseq |
| 10% CVaR - Full (Consequence) | \_10\_Perc\_CVaR\_Full\_Conseq |
| 5% CVaR - Full (Consequence) | \_5\_Perc\_CVaR\_Full\_Conseq |
| 1% CVaR - Full (Consequence) | \_1\_Perc\_CVaR\_Full\_Conseq |
| Additional Risk Quant Measurements - Actual (Consequences) | Probability of No Annual Occurrence (Consequence) - Actual | Prob\_No\_Annual\_Occurrence\_Conseq\_Actual |
| Probability of Annual Occurrence (Consequence) - Actual | Prob\_of\_Annual\_Occurrence\_Conseq\_Actual |
| Standard Deviation Annual Economic Impact (Consequence) - Actual | Variance\_Annual\_Econ\_Conseq\_Actual |
| Skewness Annual Economic Impact (Consequence) - Actual | Skewness\_Annual\_Econ\_Conseq\_Actual |
| P10 - Actual (Consequence) | P10\_Actual\_Conseq |
| P90 (10% VaR) - Actual (Consequence) | P90\_10\_Perc\_VaR\_Actual\_Conseq |
| P95 (5% VaR) - Actual (Consequence) | P95\_5\_Perc\_VaR\_Actual\_Conseq |
| P99 (1% VaR) - Actual (Consequence) | P99\_1\_Perc\_VaR\_Actual\_Conseq |
| P50 - Actual (Consequence) | P50\_Actual\_Conseq |
| 10% CVaR - Actual (Consequence) | \_10\_Perc\_CVaR\_Actual\_Conseq |
| 5% CVaR - Actual (Consequence) | \_5\_Perc\_CVaR\_Actual\_Conseq |
| 1% CVaR - Actual (Consequence) | \_1\_Perc\_CVaR\_Actual\_Conseq |
| Additional Risk Quant Measurements - Inherent (Consequences) | Probability of No Annual Occurrence (Consequence) - Inherent | Prob\_No\_Annual\_Occurrenc\_Conseq\_Inherent |
| Probability of Annual Occurrence (Consequence) - Inherent | Prob\_of\_Annual\_Occurrenc\_Conseq\_Inherent |
| Standard Deviation Annual Economic Impact (Consequence) - Inherent | Variance\_Annual\_Econ\_Conseq\_Inherent |
| Skewness Annual Economic Impact (Consequence) - Inherent | Skewness\_Annual\_Econ\_Conseq\_Inherent |
| P10 - Inherent (Consequence) | P10\_Inherent\_Conseq |
| P90 (10% VaR) - Inherent (Consequence) | P90\_10\_Perc\_VaR\_Inherent\_Conseq |
| P95 (5% VaR) - Inherent (Consequence) | P95\_5\_Perc\_VaR\_Inherent\_Conseq |
| P99 (1% VaR) - Inherent (Consequence) | P99\_1\_Perc\_VaR\_Inherent\_Conseq |
| P50 - Inherent (Consequence) | P50\_Inherent\_Conseq |
| 10% CVaR - Inherent (Consequence) | \_10\_Perc\_CVaR\_Inherent\_Conseq |
| 5% CVaR - Inherent (Consequence) | \_5\_Perc\_CVaR\_Inherent\_Conseq |
| 1% CVaR - Inherent (Consequence) | \_1\_Perc\_CVaR\_Inherent\_Conseq |