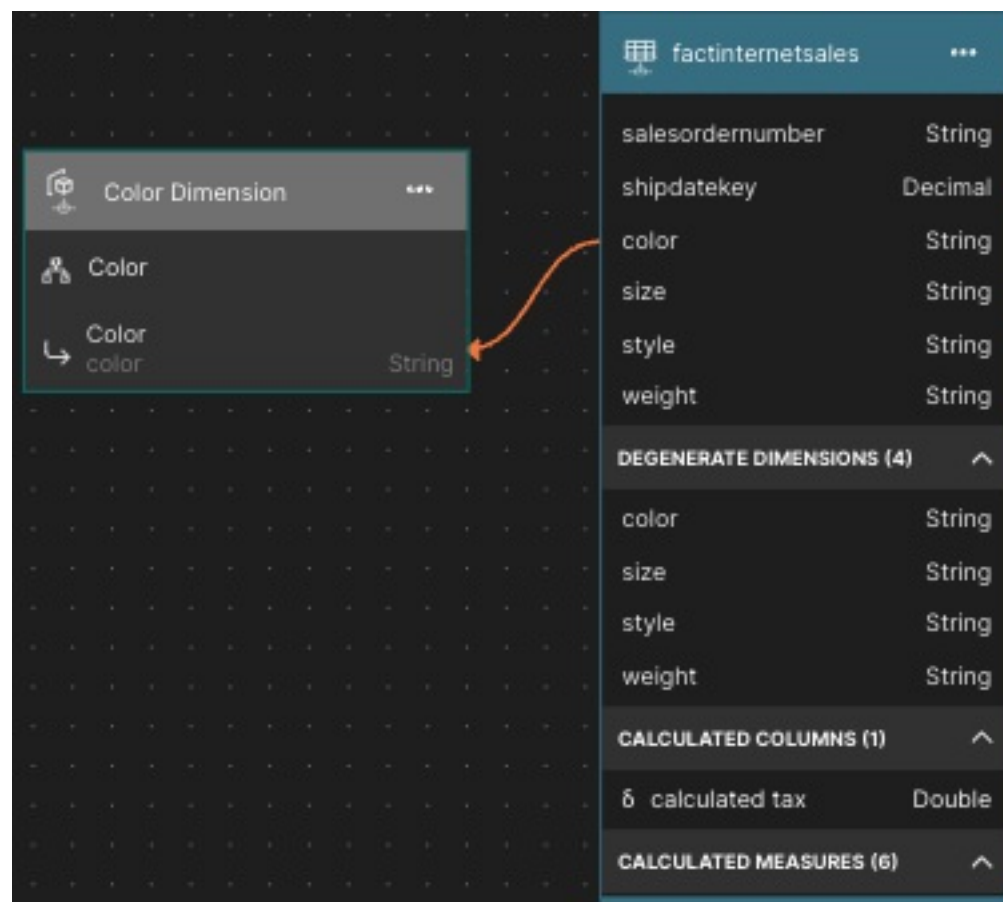


Degenerate Dimensions And Common Degenerate Dimensions

A degenerate dimension is based on one or more columns within a fact dataset. This type of dimension can also be based on one or more columns that are common to two or more fact datasets (in which case, the dimension is a common degenerate dimension). The dimension columns are not normalized into a separate dataset.

Degenerate Dimensions

When you have your dimensional data and fact data in the same dataset, you can still model logical dimensions in AtScale. For example, in the image below, the Color dimension, which is a degenerate dimension, is embedded in the factinternetsales fact dataset.



A degenerate dimension can be modeled on one or several columns of the fact dataset. In this case, the modeling workflow is similar to that of a normal dimension, except that the table or view backing the dimension is the fact dataset itself.

Logical dimensions that are degenerate dimensions are represented with a gray header on the Canvas.

Common Degenerate Dimensions

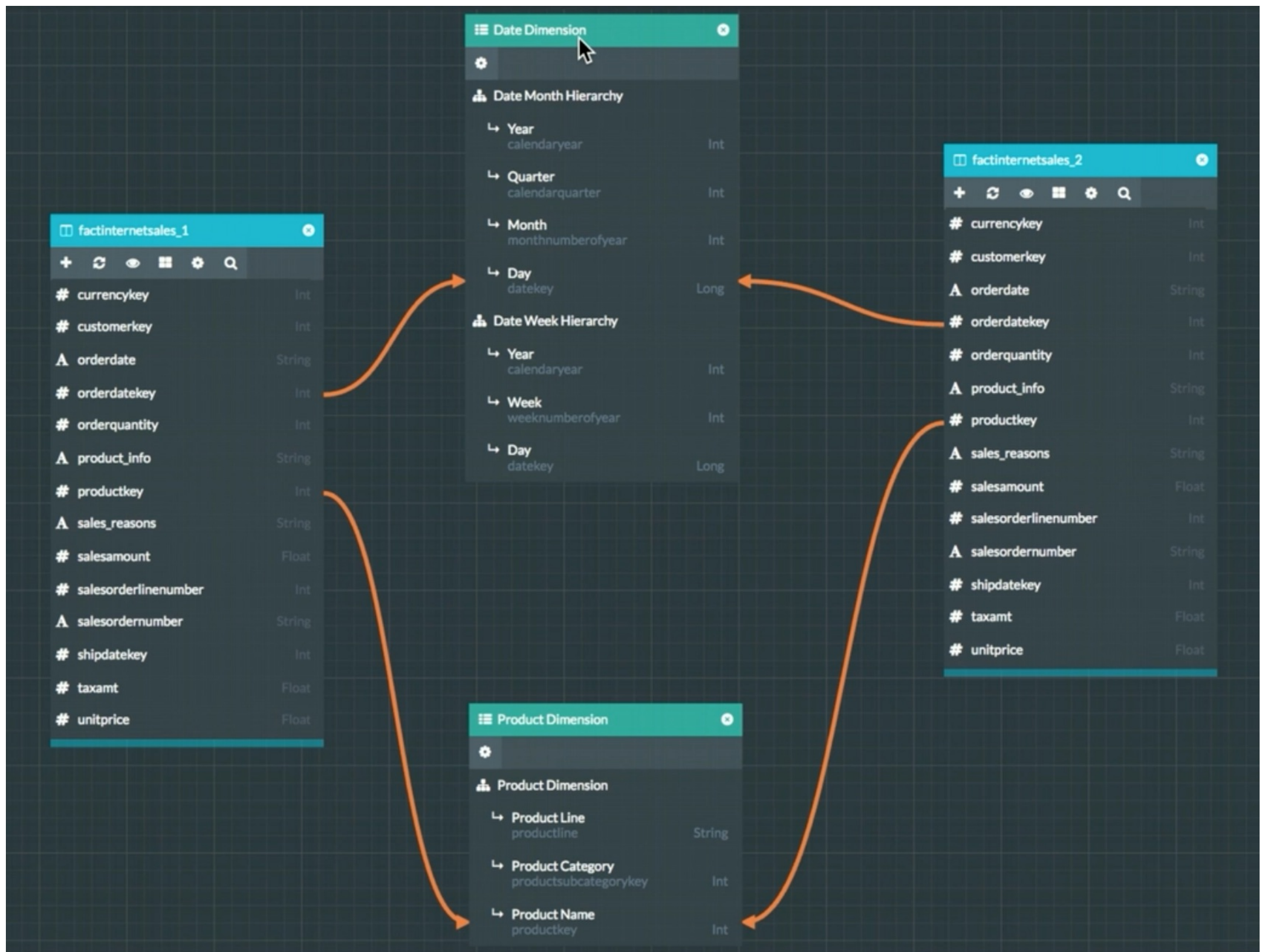
Suppose that a model has two fact datasets: `factinternetsales_1` and `factinternetsales_2`. You want to be able to view the data for both fact datasets by a shared set of dimensions: a `Date` dimension, a `Product` dimension, and a `Currency_Key` dimension. The data for the first two dimensions are in separate datasets. The data for the `Currency_Key` dimension are in the `currencykey` column of each fact dataset. `Currency_Key` is therefore a degenerate dimension. To use it with both fact datasets, you'll need to make it a common degenerate dimension.

The two fact datasets have the same columns. The main difference is that they have different values for the `currencykey` column.

Table	Values in the <code>currencykey</code> column
<code>factinternetsales_1</code>	6, 19, 29
<code>factinternetsales_2</code>	39, 98, 100

First, you choose to take care of the regular dimensions. You include the `Date` dimension and you join `orderdatekey` in each fact dataset to `datekey` in the `Date Month` hierarchy. You next include the `Product` dimension and you join `productkey` in each fact dataset to `productkey` in the dimension. Your model now looks like this:

Figure 1. Relationships from the two fact datasets to the Date and Product dimensions

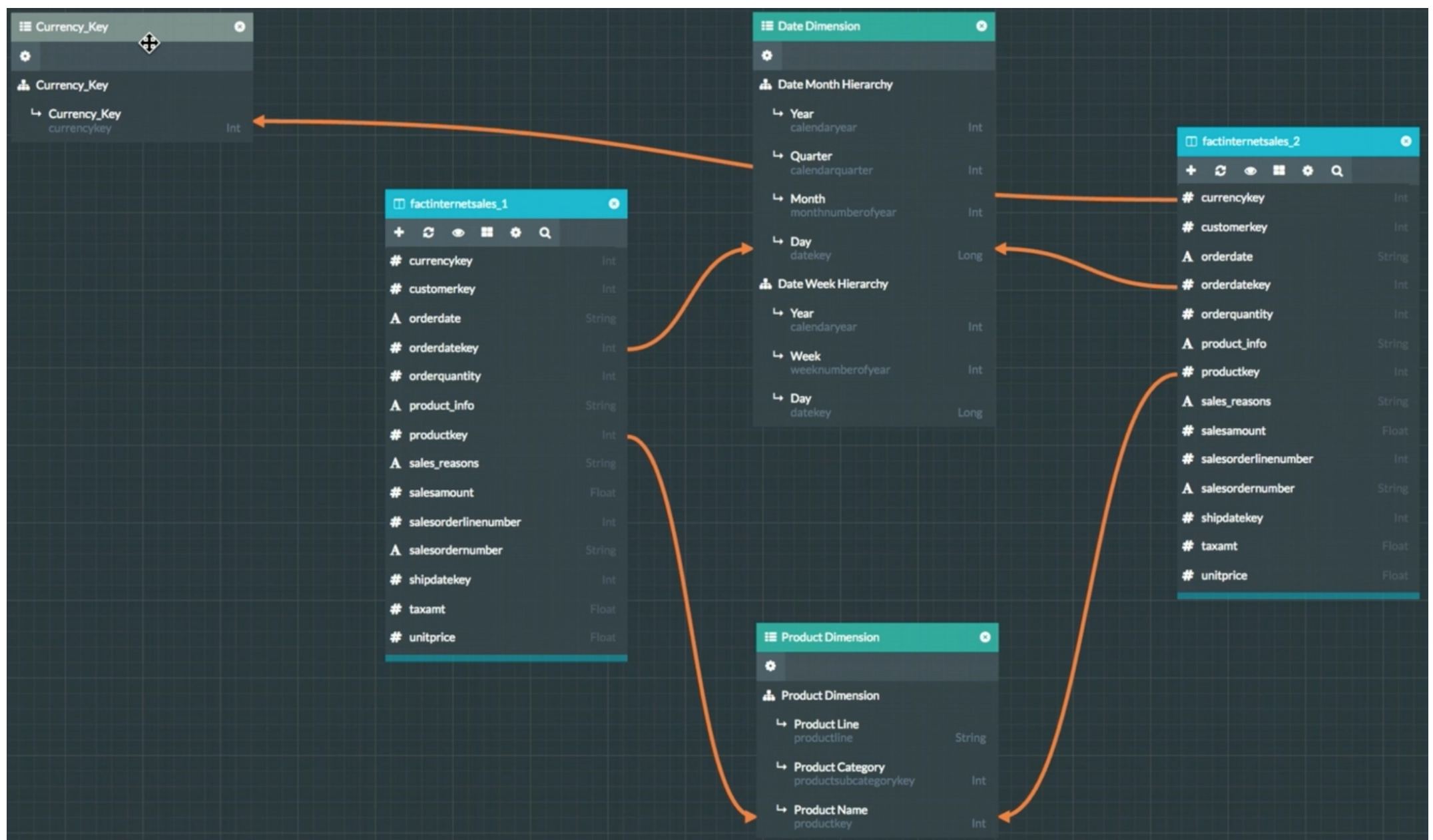


You also create two new metrics, one on each fact dataset, based on the column `salesamount`. Then, you create a calculated metric that is the sum of the two metrics you just created.

Now, you create the common degenerate dimension that is based on the `currencykey` column in `factinternetsales_2`. To do so, you select the `currencykey` column in `factinternetsales_2`, click the **Create Dimension** icon in the menu above the dataset, then complete the fields in the **Bulk Create Degenerate Dimensions** panel.

The degenerate dimension appears on the Canvas.

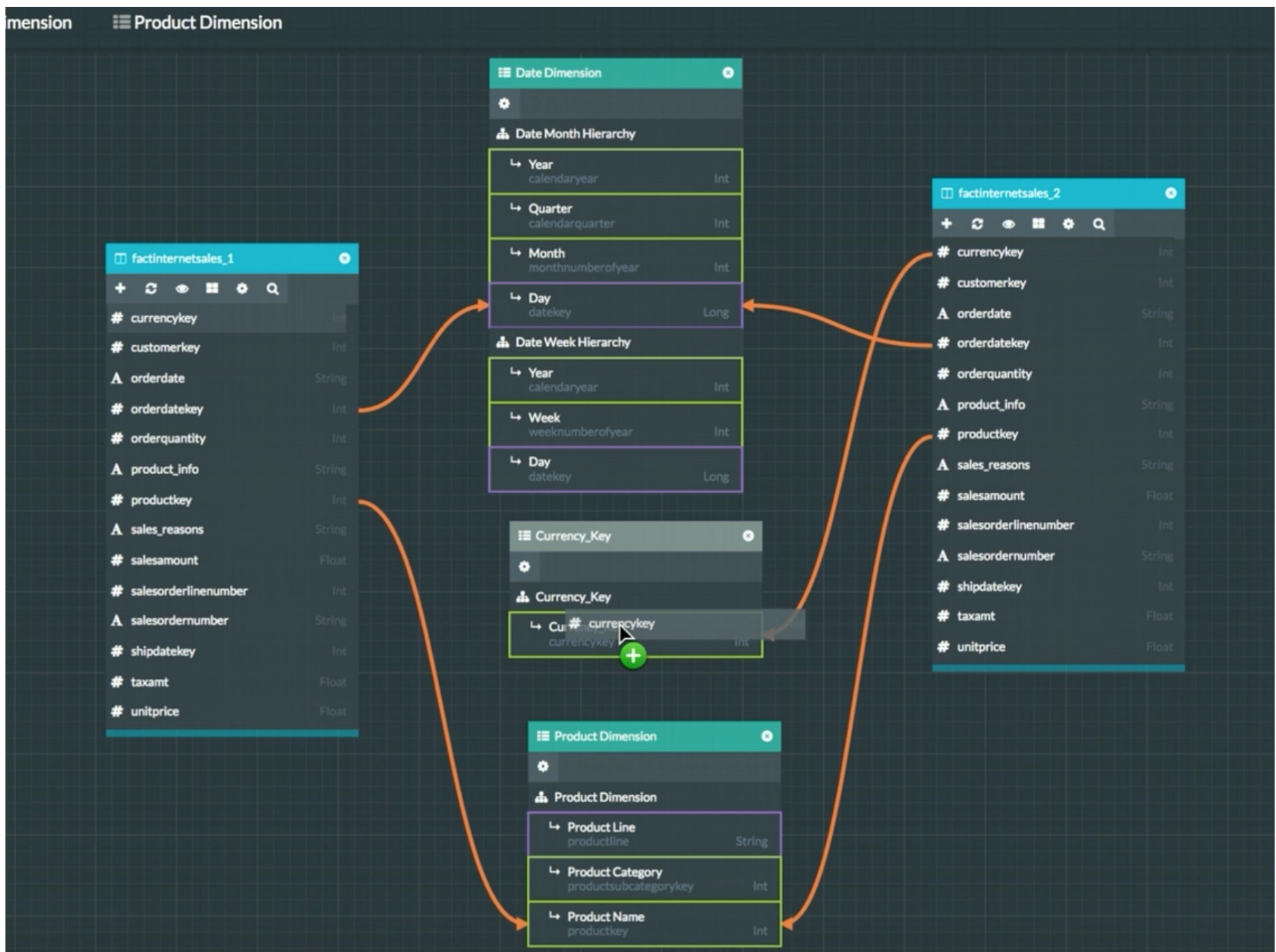
Figure 2. The new degenerate dimension on the Canvas



You drag it to the center of the Canvas.

To also use this degenerate dimension with the fact dataset `factinternetsales_1` and make it a common degenerate dimension, you drag `currencykey` from that table on to the dimension.

Figure 3. Dragging `currencykey` from `factinternetsales_1` to the degenerate dimension



When you create a common degenerate dimension, you must ensure that it conforms to these constraints:

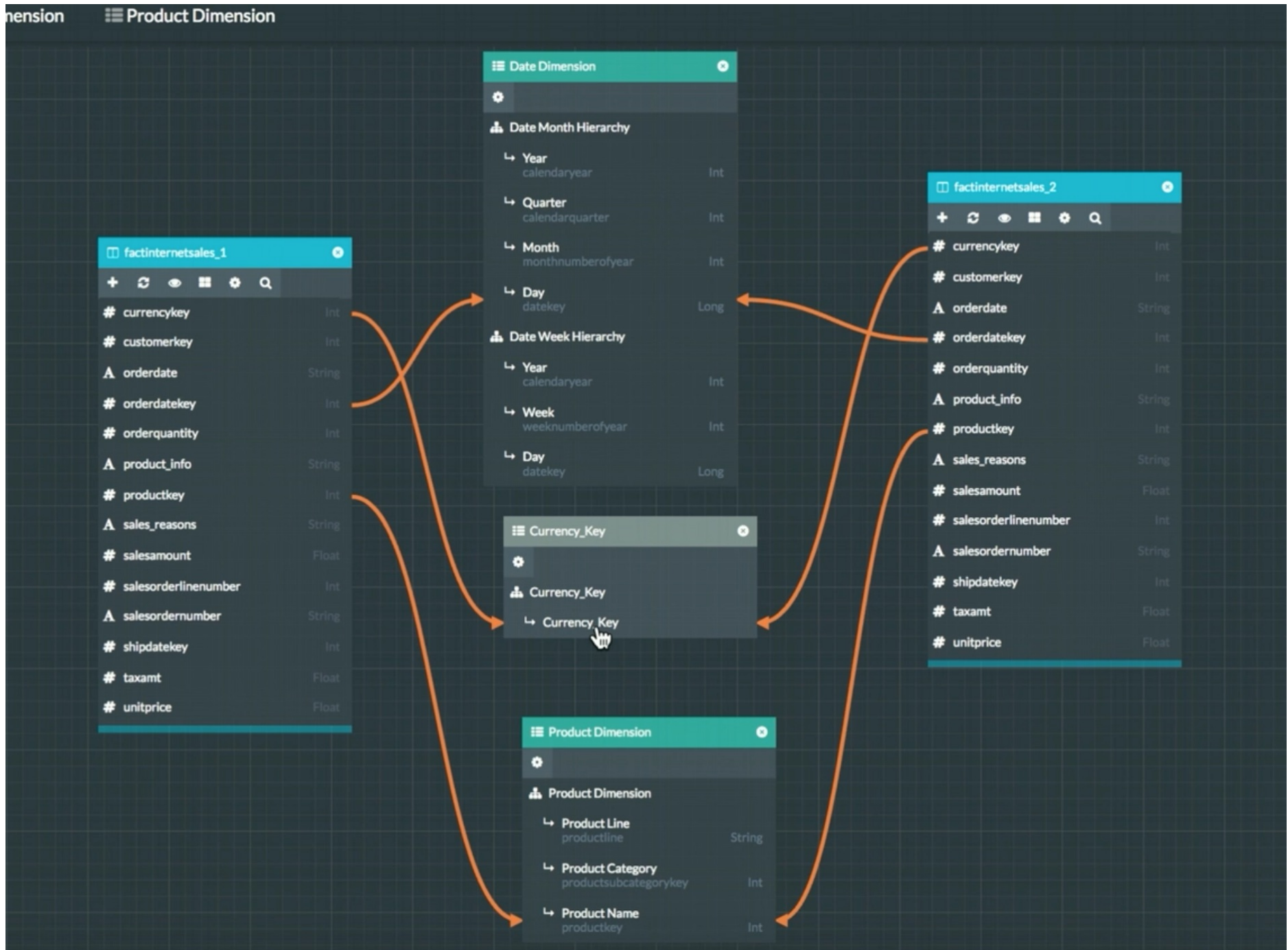
- ▶ You must use the same number of columns from each fact dataset.
- ▶ The data types must be consistent. Key columns used from each fact dataset must all use the same data types. Value columns used from each fact dataset must all use the same data types.
- ▶ If an order column is selected in one dataset, the order column from each of the other fact tables must be selected, too.



Note: AtScale supports the creation of hierarchies with more than one level for shared degenerate dimensions. See the [Add a Degenerate Dimension or a Common Degenerate Dimension](#) topic for detailed instructions.

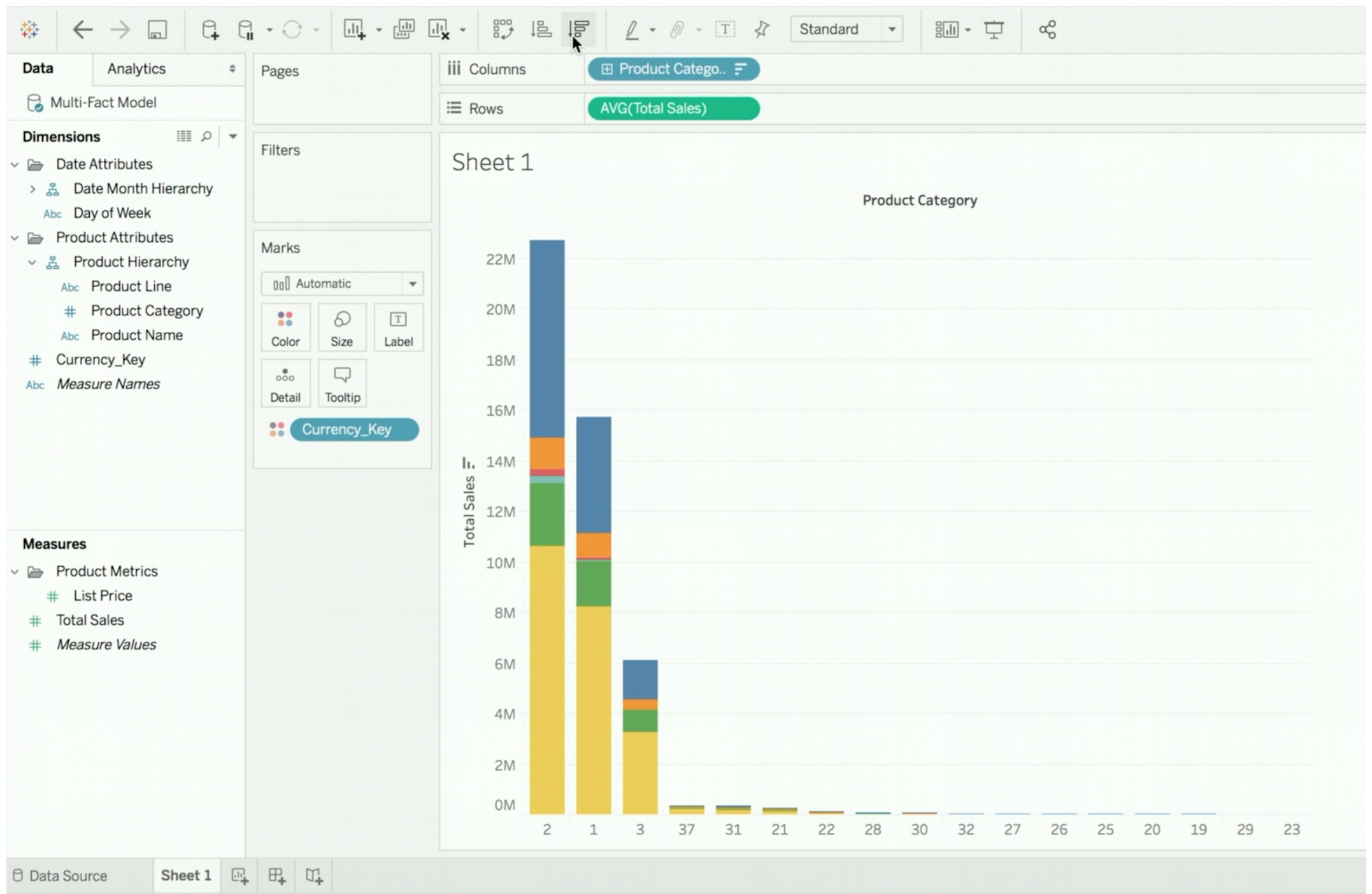
After dragging the column, you now see that both fact datasets have relationships that connect them to the common degenerate dimension.

Figure 4. Relationships now exist from each fact dataset to the common degenerate dimension



If you now publish the project and connect to the .tds file from Tableau, place Total Sales on the Rows shelf, Product Category on the Columns shelf, and highlight the values of Currency_Key by color, you can see the frequency of the use of the different currency keys across the product categories.

Figure 5. The frequency of the use of the different currency keys across the product categories



As indicated by this legend, the full range of currency keys in both fact datasets is being used in the display.

Figure 6. The color legend for the bar chart



Moreover, if you drag `Currency_Key` into the Filters box, the full range of values is also available for filtering.

Figure 7. The selection box for filtering on the values of `Currency_Key`

Currency_Key

- (All)
- 6
- 19
- 29
- 39
- 98
- 100

Currency_Key

- 6
- 19
- 29
- 39
- 98
- 100