TABLEAU

Day 13

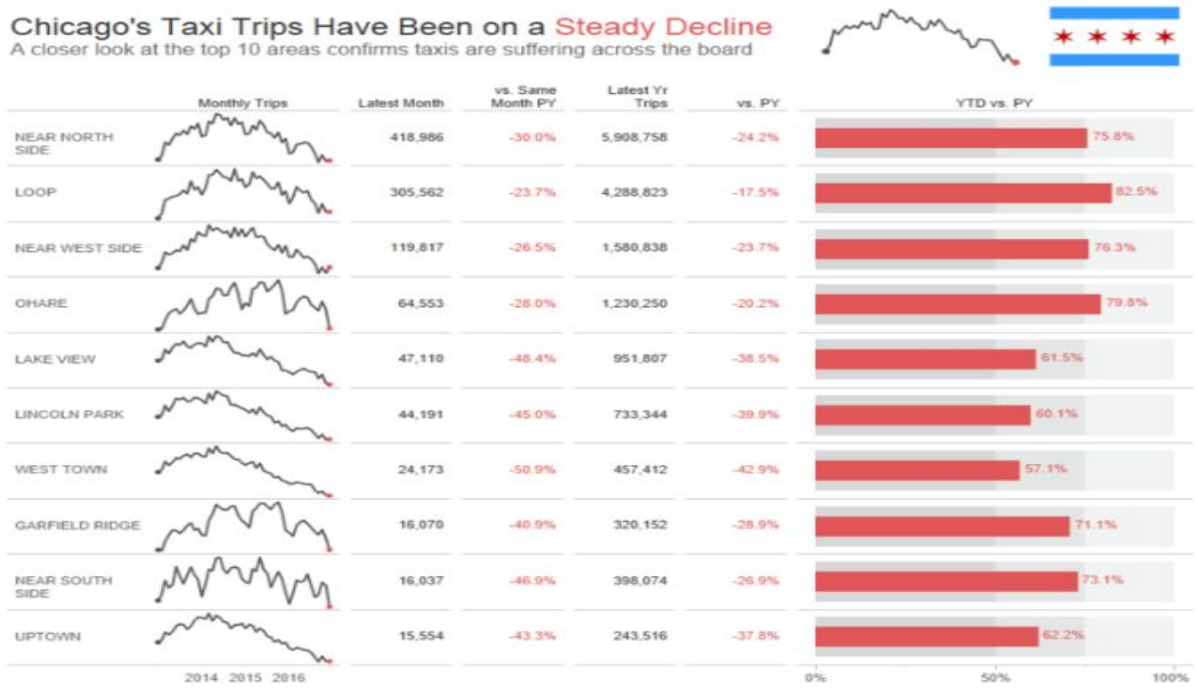
Sparklines

Sparklines are condensed graphs or charts that provide **quick trends** at a glance.

A sparkline is a very small line chart, typically drawn without axes or coordinates. It presents the general shape of the variation (typically over time) in some measurement in a simple and highly condensed way.

Example

Sparklines are used here to show the monthly taxi trips trend of different regions in Chicago. We can see the general trend of each region and analyze the statistical data at the same time. The embedded bar charts in this table can also be regarded as sparklines in a broad sense.

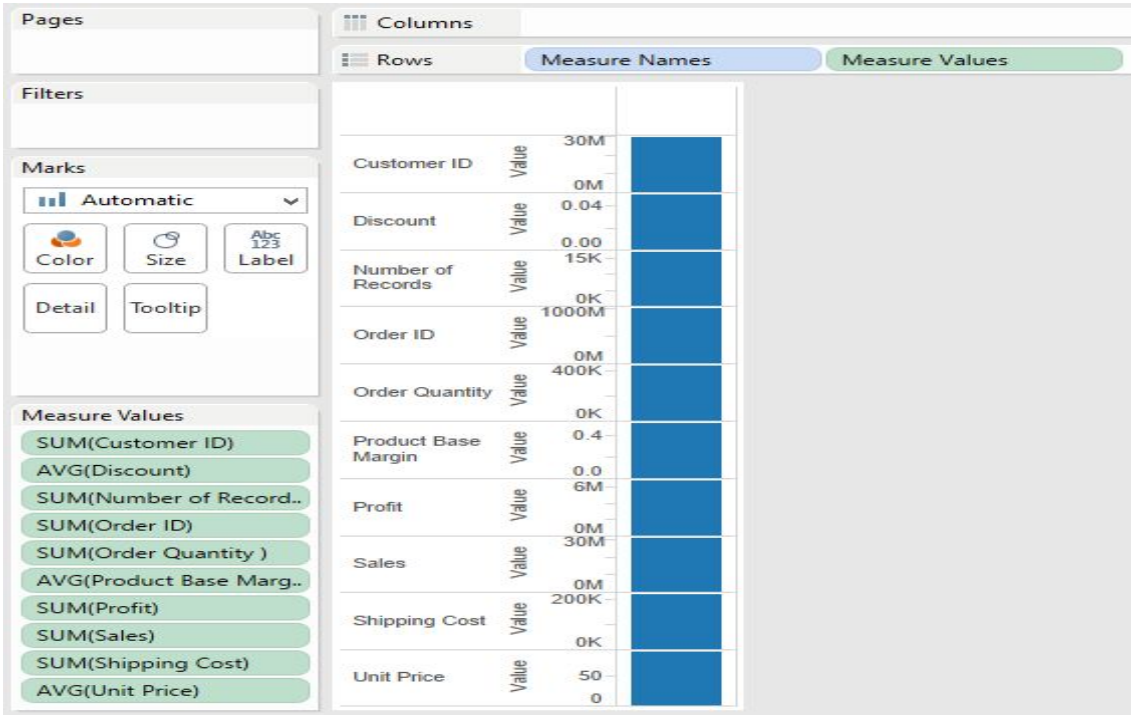


Sparklines highlight the variation instead of absolute value. They focus on the general shape of the data. So, in most cases, **truncating** and **non-synchronizing** axes are acceptable.
The most outstanding characteristic of sparklines is that it is extremely **space-efficient**. They can even be as small as one line of text and embedded into a Text Table. Sparklines also have high **scalability**. They are able to compact a lot of data into a small space.

How to make sparklines in Tableau?

To get started, we will leverage two special fields in our data, *Measure Names*, and *Measure Values*. These fields are automatically generated in our data by Tableau so they will be available to use even though they do not exist in our underlying data.

Step 1 – Place 'Measure Names', then 'Measure Values' on our 'Rows' shelf.

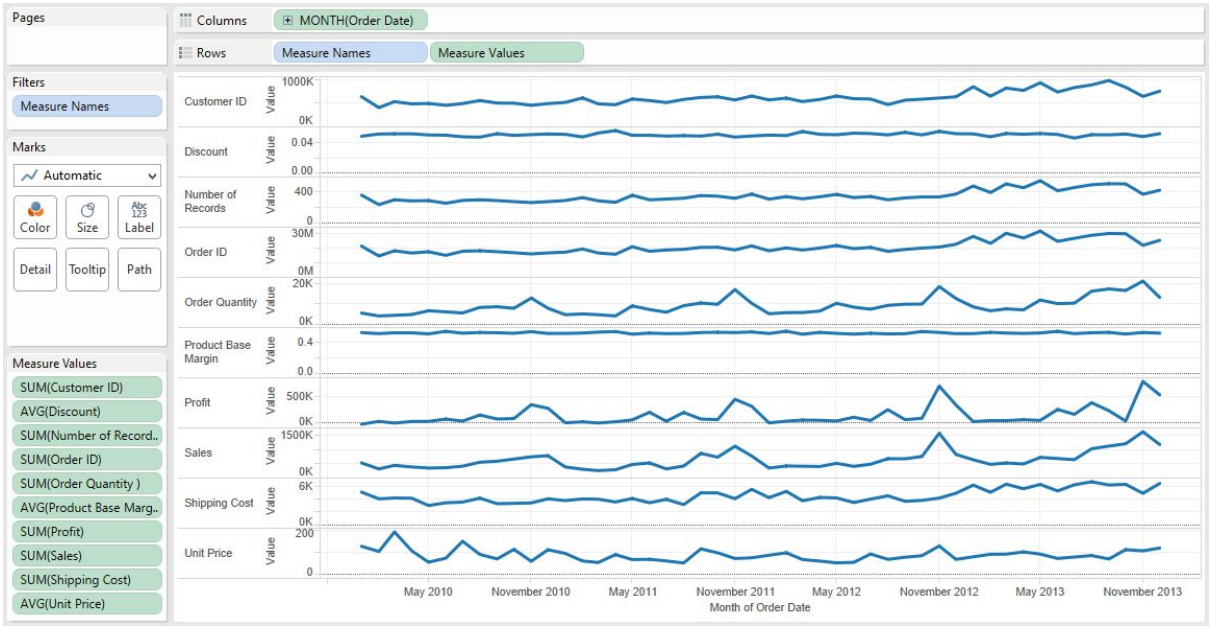


Notice that *every* measure name appears in your chart, whether it is relevant to your analysis or not – more on filtering out specific measure names later. Since you placed 'Measure Values' on your view as well, each measure name has an accompanying value, shown by default as a bar in each measure's default aggregation (i.e. SUM, AVG, etc.). I have also changed the view's fit to "Fit Height" so that I can see all of the measure names and values without scrolling.

This is a good start, but now we need an element of time to trend the measure values.

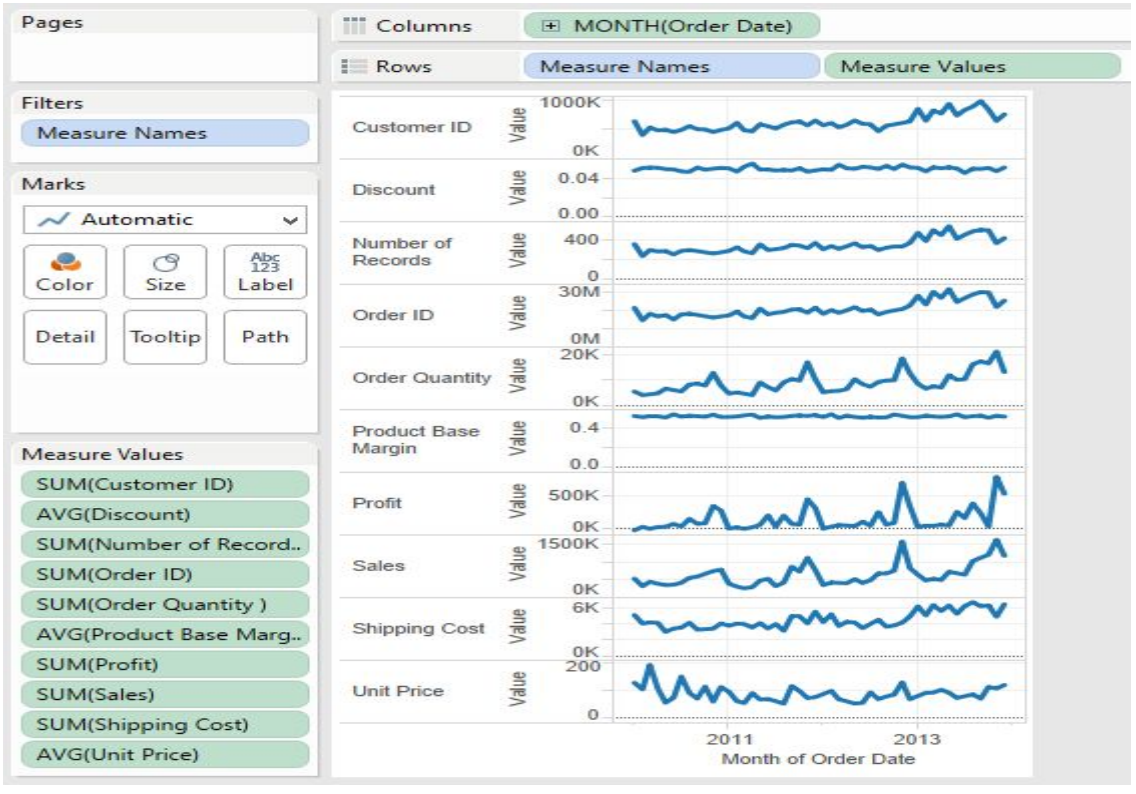
Step 2 – Place a date field on the 'Columns' shelf.

By right-clicking and dragging my 'Order Date' field onto the 'Columns' shelf, I was given an extra option to select the date aggregation (i.e. Year, Month, Week). To get the view to look as it does below, I chose the 'MONTH' option that was colored green. The green indicates that the date will be continuous.



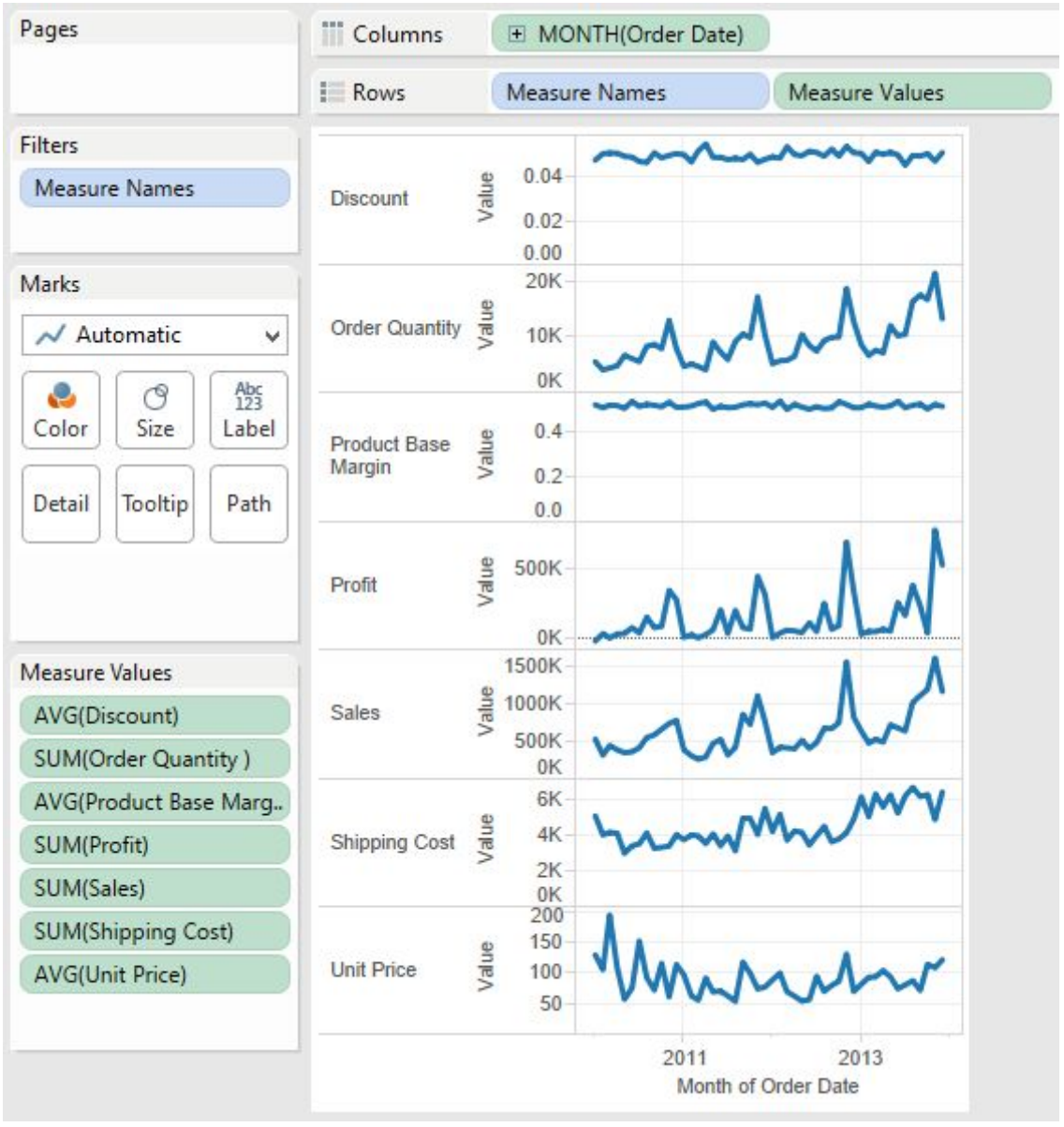
We have now essentially made a series of line graphs, but they are not very 'sparky', making it difficult to quickly glean insights. This is an easy fix in Tableau by clicking and dragging the right side of the graph to the left to reduce the width of the view.

Step 3 – Reduce the width of the sparklines view to make the trends pop.



You can see at this point that the sparklines are coming together, but as previously mentioned, we have some irrelevant measure names that are not adding much to our analysis.

Step 4 – Remove irrelevant measures from your view.



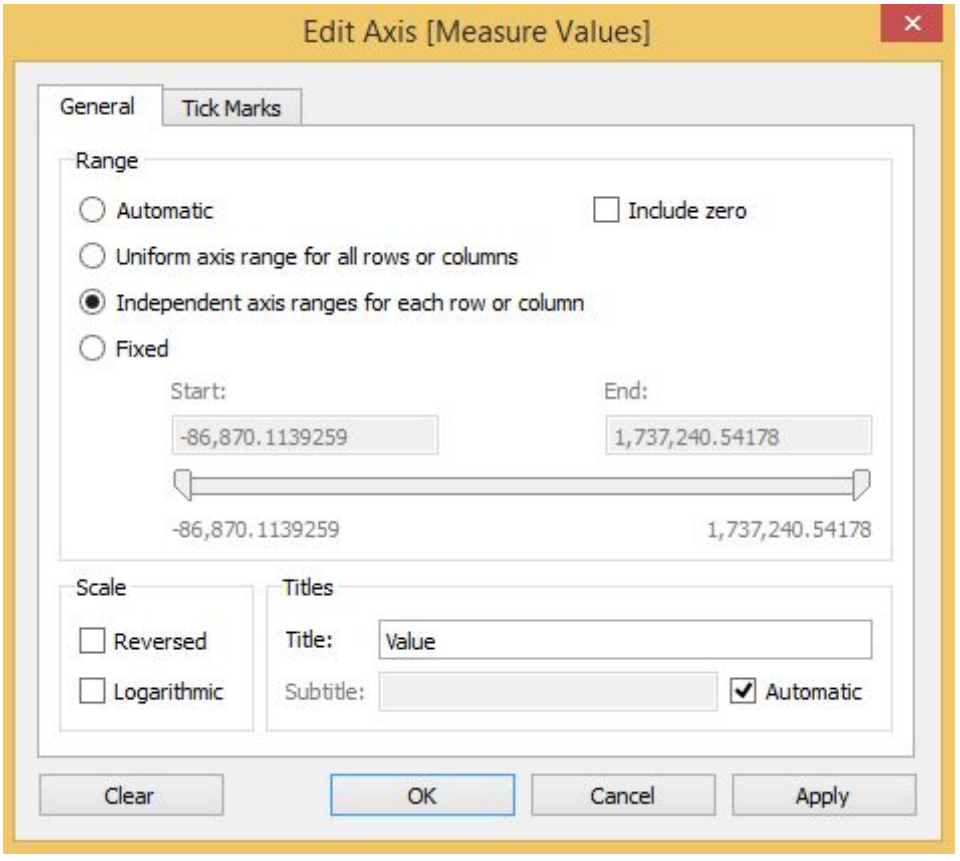
For the purposes of this analysis, I removed three measures by dragging their green 'pill' from the 'Measure Values' shelf. The three values I removed were 'Customer ID' and 'Order ID', which should actually be dimensions and not measures, and 'Number of Records', which is another generated Tableau field.

We're getting even closer now, but notice that 'Discount' and 'Product Base Margin' are not providing much insight because these two measures have very little fluctuation. For this reason, I typically remove zero from my axes in

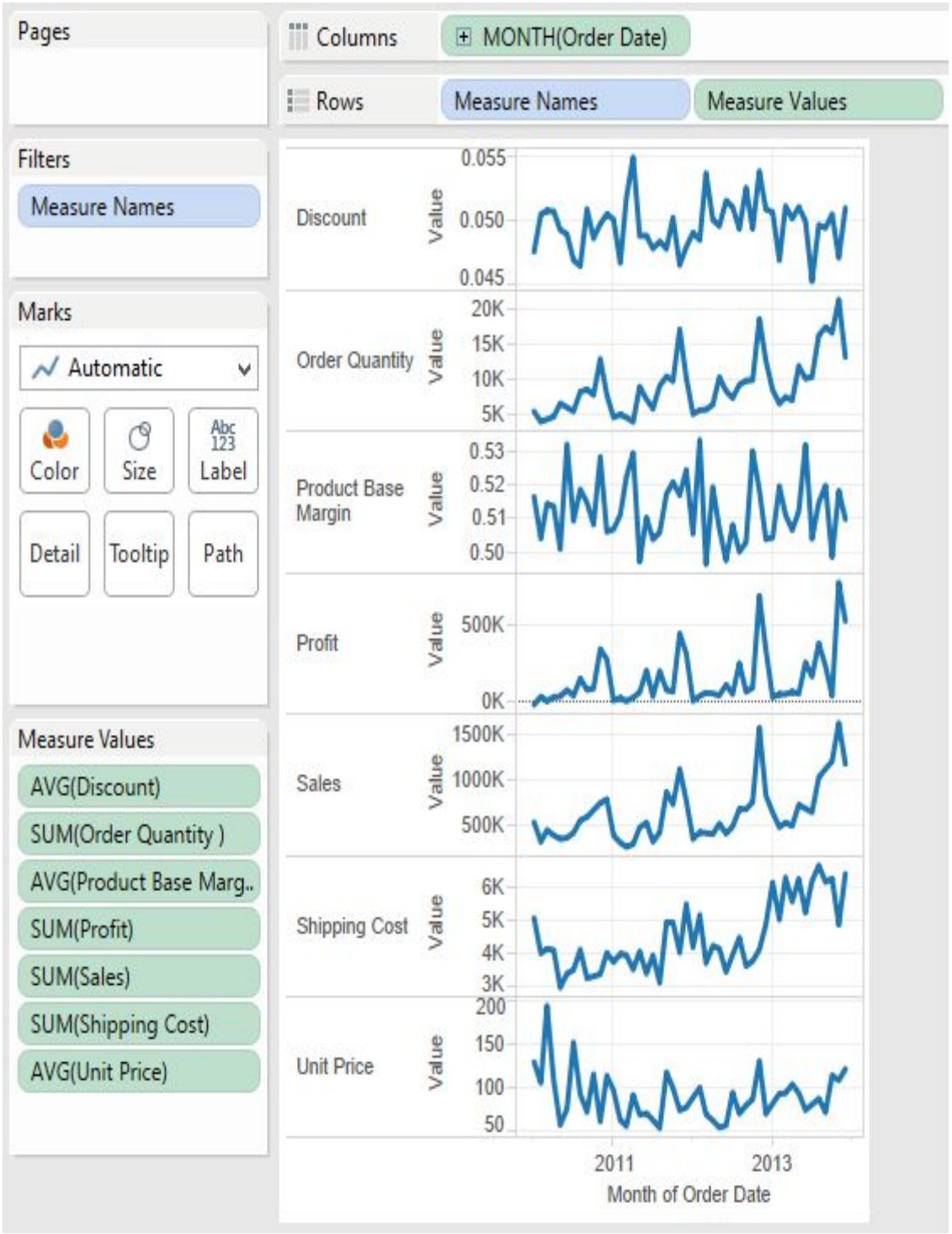
sparklines. There is much debate around whether it is ever appropriate to exclude zero from your axes, because it is easy to mislead your audience when an axis starts anywhere but zero. In the case of sparklines, and measures with little to no volatility, I recommend either excluding zero on the axes, or removing these types of measures completely from your view. I say this because if you cannot gain any insight from these measures in your sparklines, they are not adding any value.

Step 5 – Exclude zero from your axes or remove measures that have little to no fluctuation.

To do this in Tableau, right-click on any of the axes in your sparklines and choose "Edit Axis". You will see a box specifically created to give you the option to include or exclude zero in your axes. By default, the box to "Include zero" is checked. To exclude zero, uncheck this box.

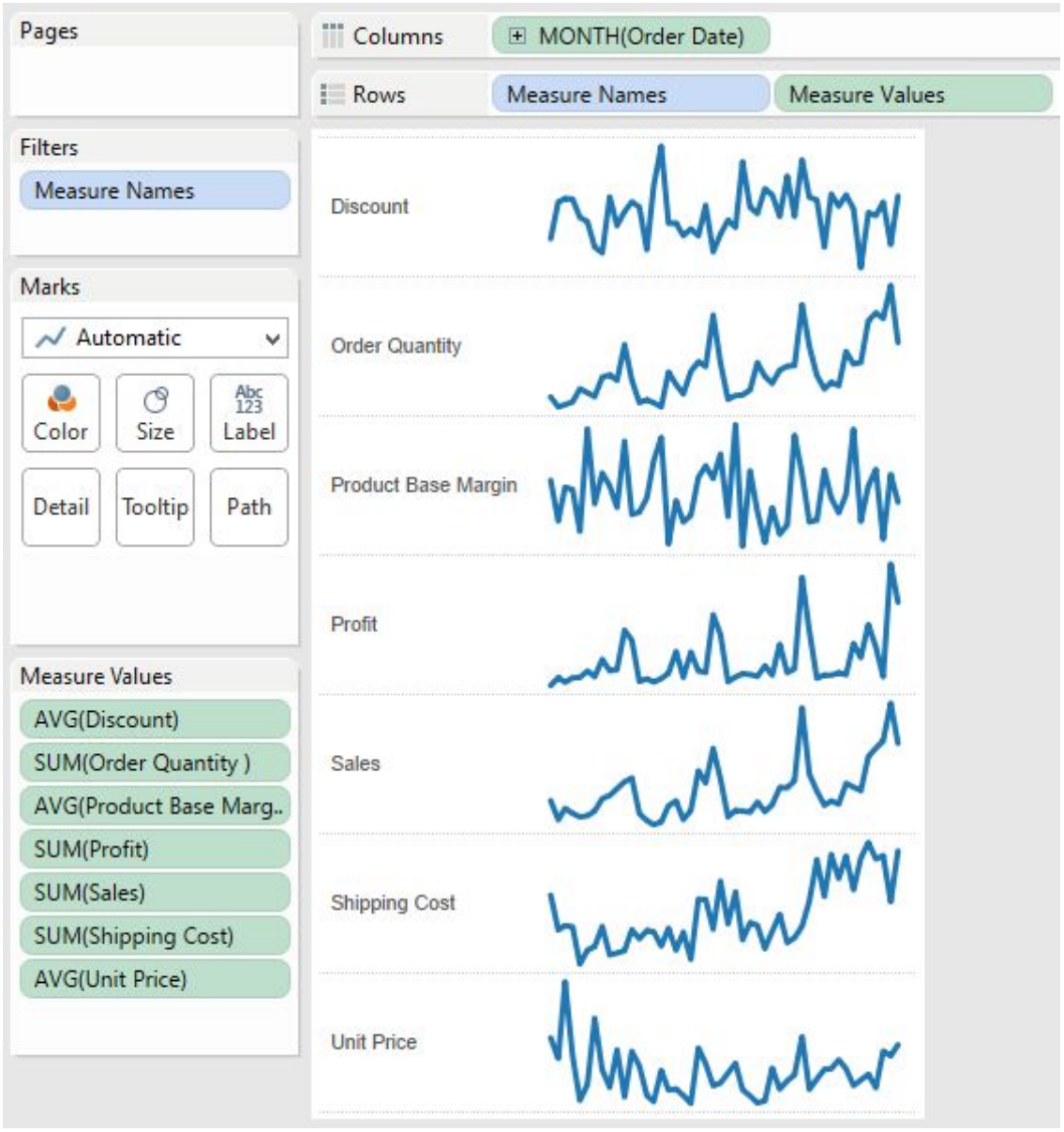


You can now see the fluctuation in 'Discount' and 'Product Base Margin'.



From here, all that's left is to format the sparklines to your preference. Remember, sparklines are not quite like regular charts or graphs in that they are meant to provide quick trends at a glance. They don't usually contain typical context, such as the axis values.

Step 6 – Hide axes and format your view

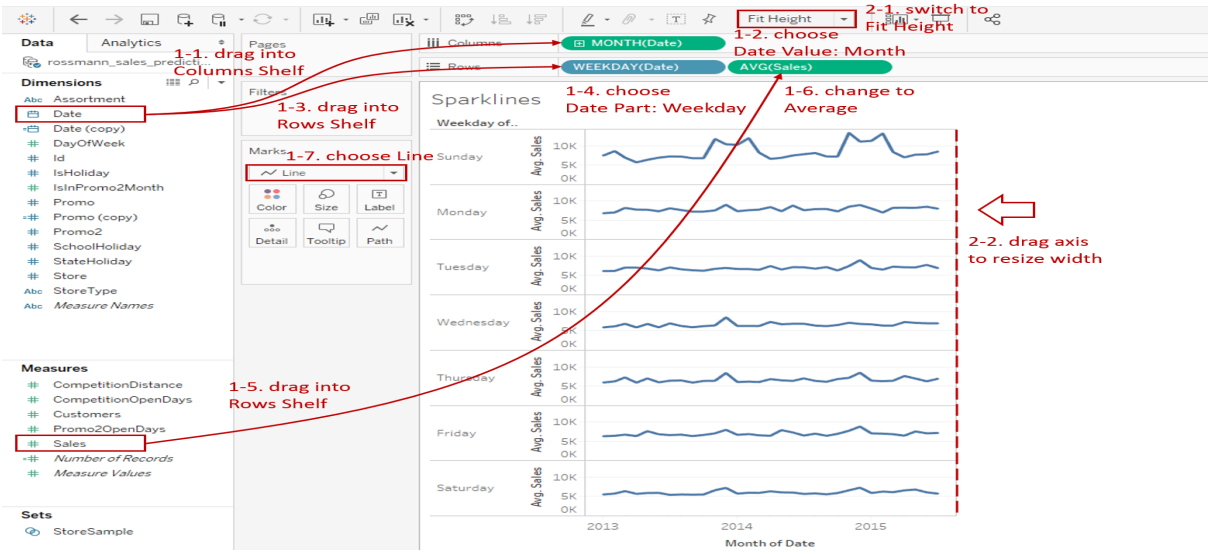


Formatting changes I made to finalize this view include:

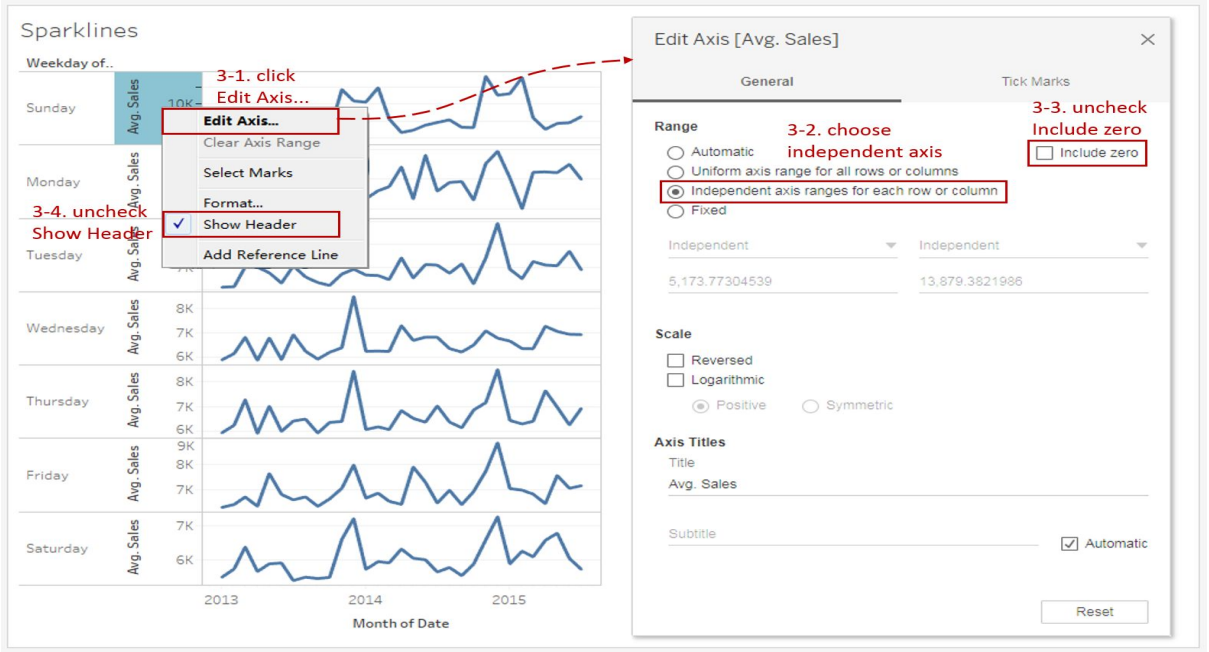
- Hid the Y axis by right clicking on the axis and deselecting “Show Header”.
- Hid the X axis. Some prefer to keep the axis that shows the date range. I personally exclude this from my sparklines, but if you need to show it, I recommend only showing the start and end points.
- Removed the gridlines.
- Removed the column separators.
- Softened the row separators by choosing a dotted line instead of a solid line.

There is a wonderful representation of the above points in this graph:

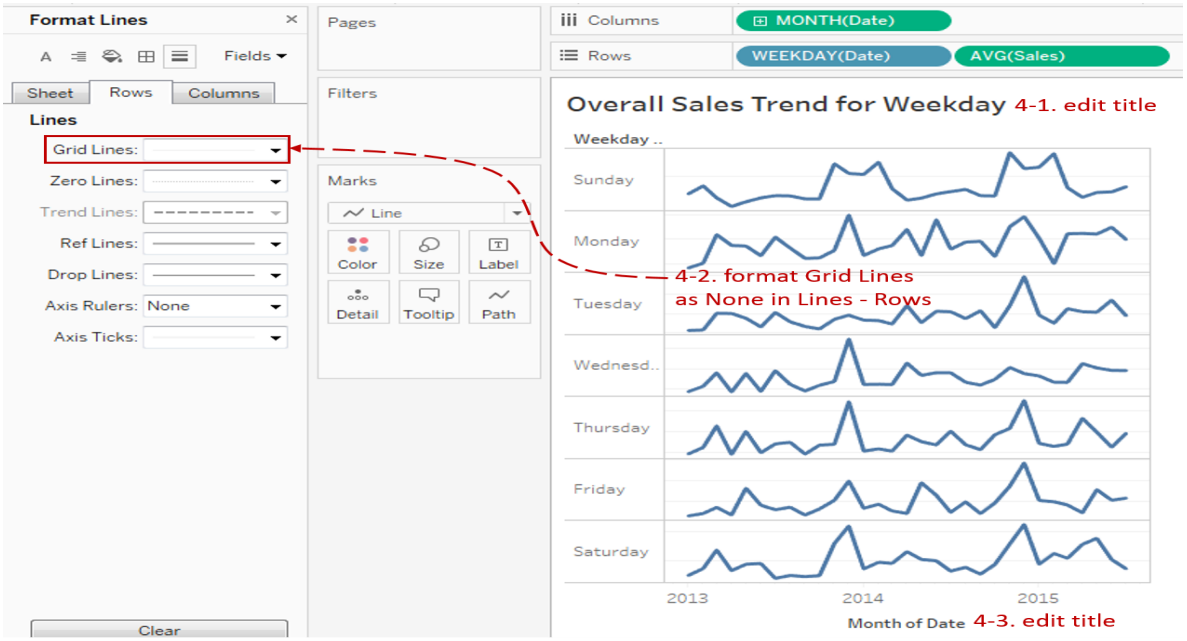
1.



2.



3.


Format Lines
Fields
Sheet
Rows
Columns
Lines
Grid Lines:
Zero Lines:
Trend Lines:
Ref Lines:
Drop Lines:
Axis Rulers: None
Axis Ticks:
Clear
Pages
Filters
Marks
Line
Color
Size
Label
Detail
Tooltip
Path
Columns
MONTH(Date)
Rows
WEEKDAY(Date)
AVG(Sales)
Overall Sales Trend for Weekday
4-1. edit title
Weekday ..
Sunday
Monday
Tuesday
Wednesd..
Thursday
Friday
Saturday
2013
2014
2015
Month of Date
4-3. edit title
4-2. format Grid Lines
as None in Lines - Rows