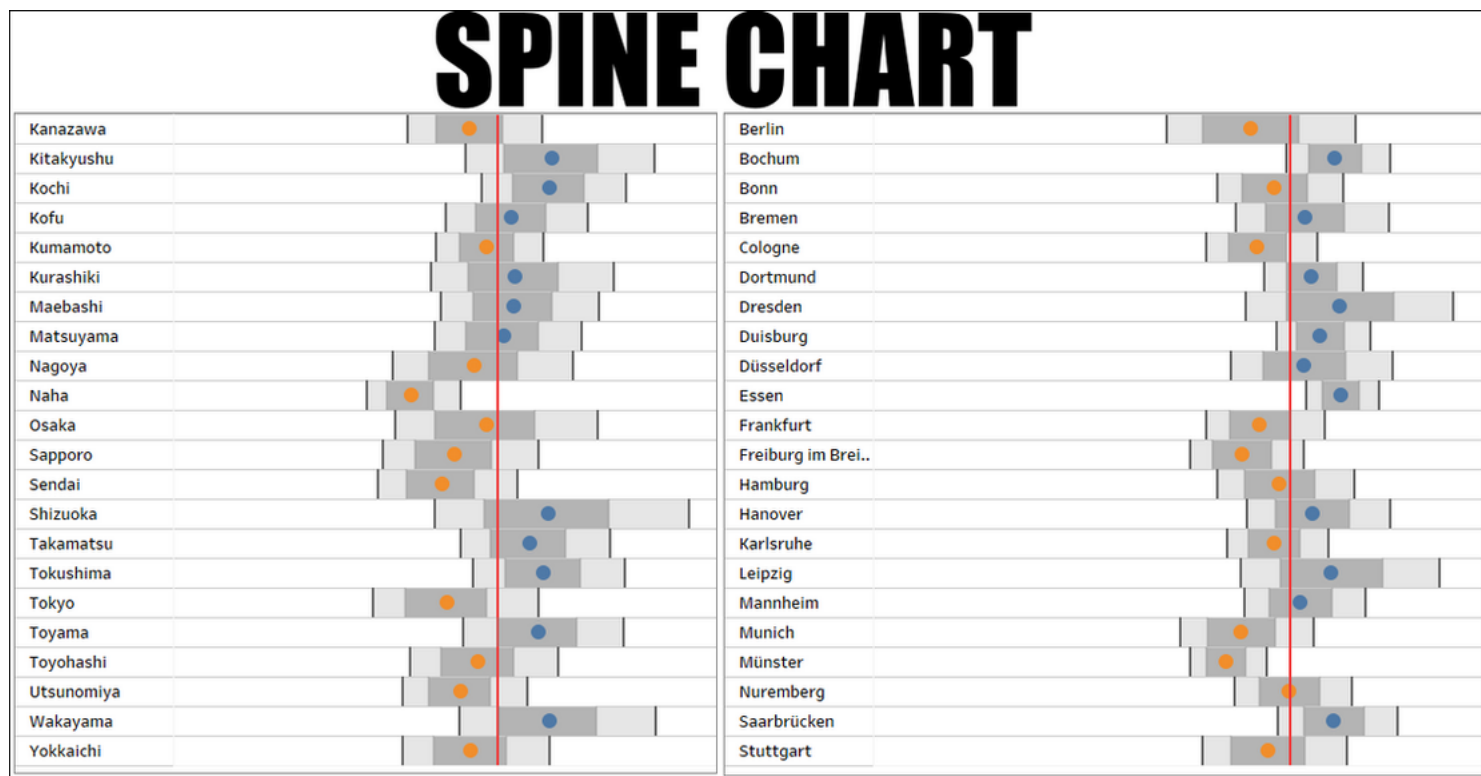Bernard · Feb 21, 2020

Spine Chart in Tableau

Updated: May 17

What is a spine chart?

Spine chart is a visualization that shows at a glance how one area compares with others across a range of indicators. Summary statistics of each measure such as the average are aligned to form one central line or 'spine' on the chart. This spine is the comparator and is usually the national or regional average to which local area values are compared. Most often the vertebrae show the range of values – the minimum, maximum, 25th and 75th percentiles. Area specific values are placed on top of these summaries, allowing the viewer to understand how the area compares with the rest of areas for that measure. Most often, color is applied on the area specific values to represent significance of its value compared to the comparator.
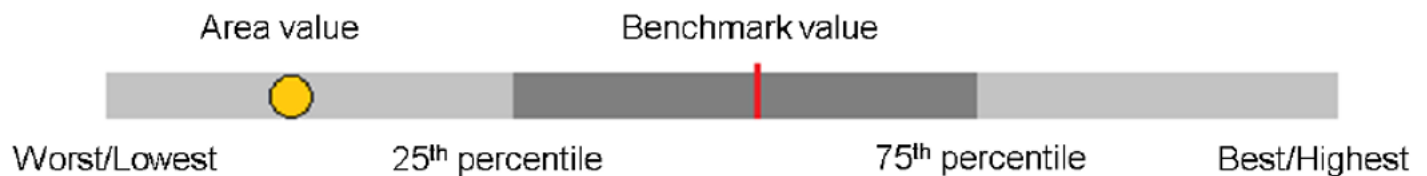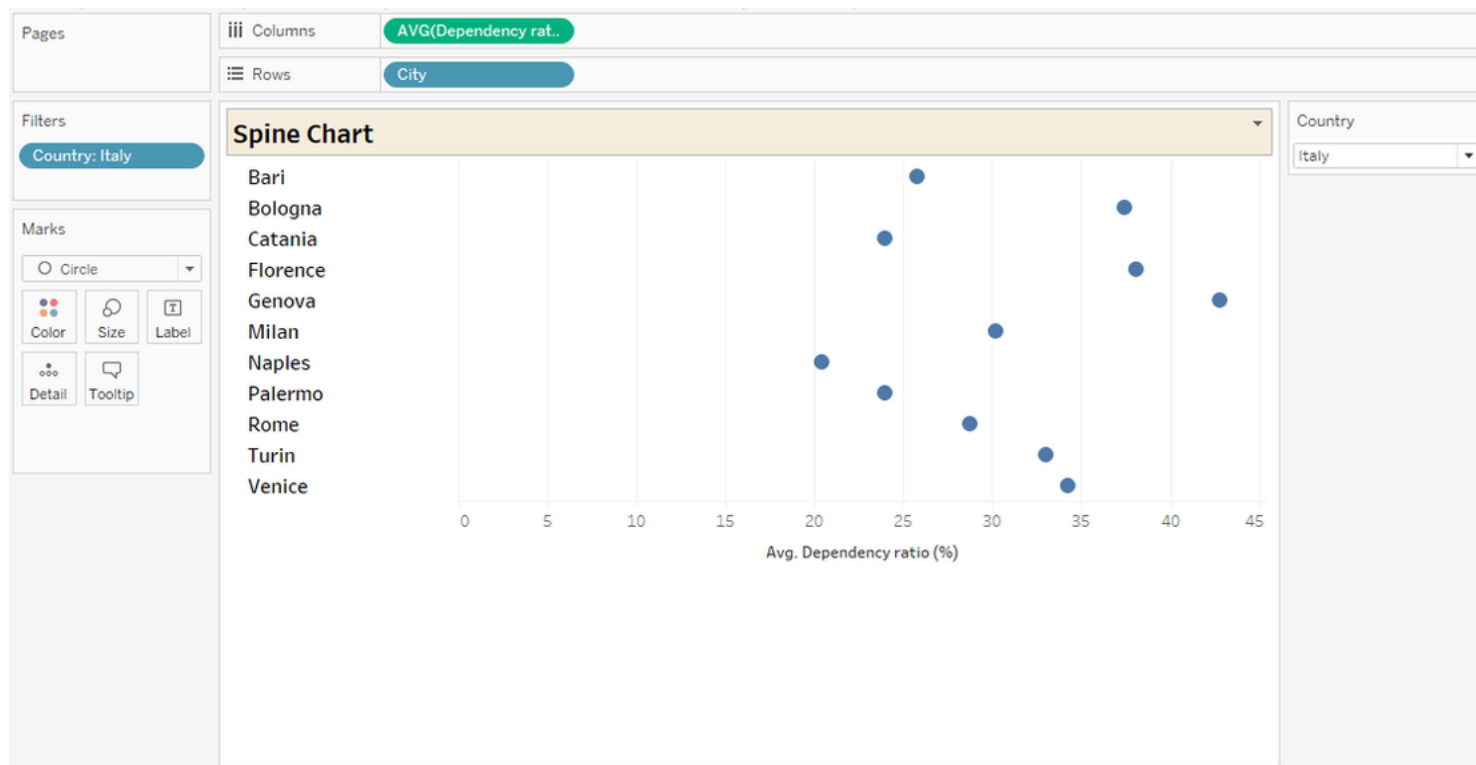
Example of a spine chart.

How do you create a spine chart in Tableau?

Using OECD data on old age dependency ratio computed from people aged 65 and more and people aged 15 to 64. I will show you how to create a spine chart in Tableau. Get the data <u>here</u> to follow along.

- Connect to the data to Tableau and pivot it to create the 'Year' and 'Dependency ratio' columns.

- Drag dimension 'City' to the rows shelf and measure field 'Dependency ratio' to the columns – AVG(Dependency ratio).

- Choose 'Circles' under marks.

- You can filter a single 'Country' to minimize the view –have filtered 'Italy' for this example.

Compute Country's average, Max, Min , Lower quantile and Upper quantile of each city as follows;

Country average

Results are computed along Table (across).

WINDOW_AVG(AVG([Dependency ratio (%)]))

Min

{ FIXED [City]:MIN([Dependency ratio (%)])}

Max

{ FIXED [City]:MAX([Dependency ratio (%)])}

Lower quantile   ✕
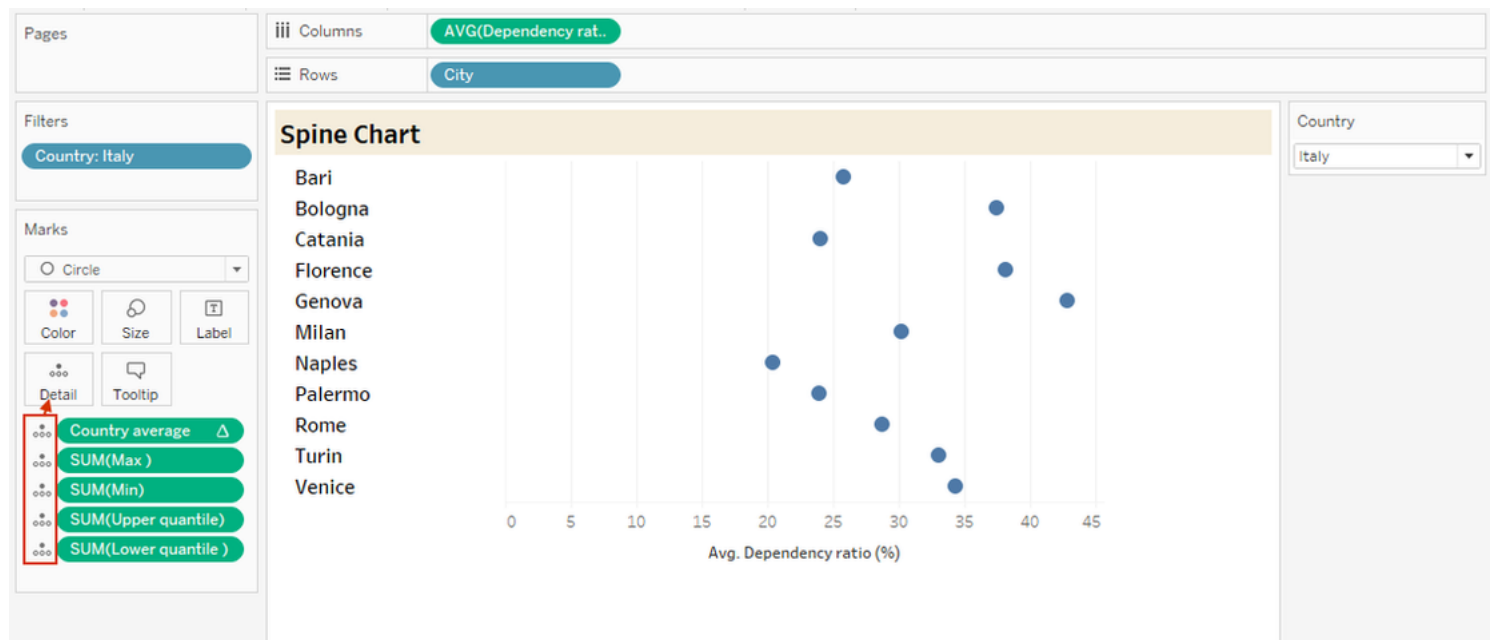
```
{ FIXED [City]:PERCENTILE([Dependency ratio (%)],0.25)}
```

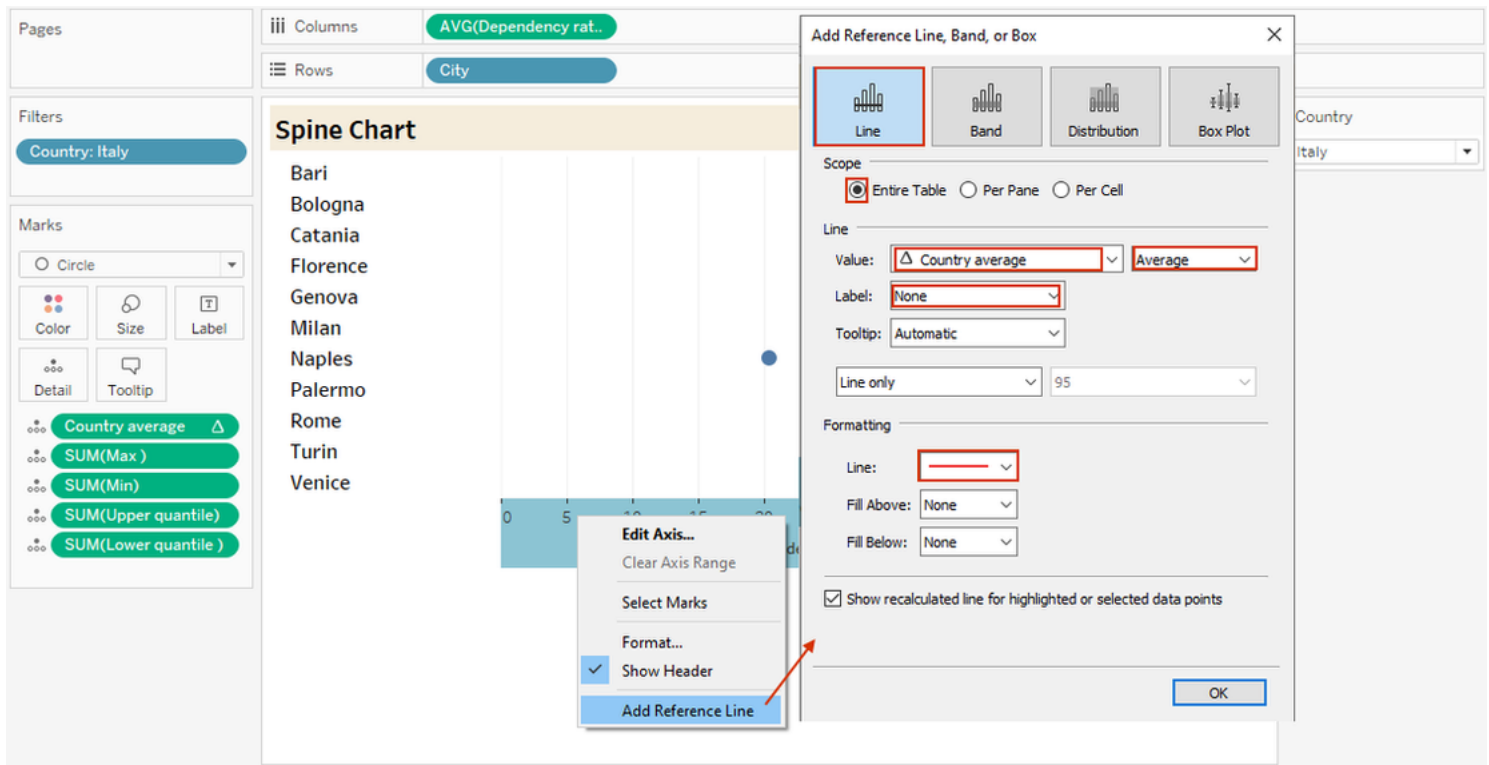Upper quantile   ✕

```
{ FIXED [City]:PERCENTILE([Dependency ratio (%)],0.75)}
```
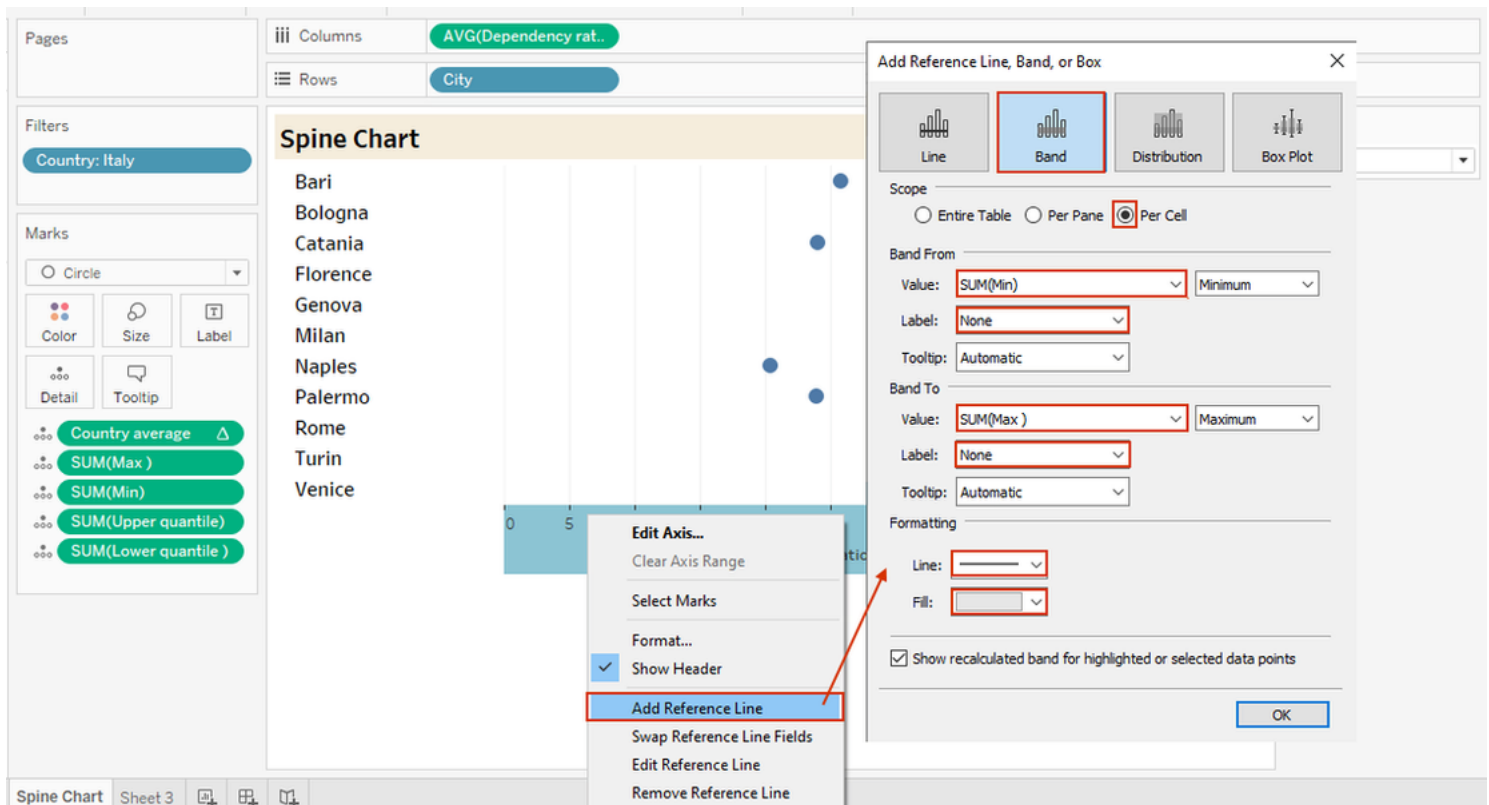
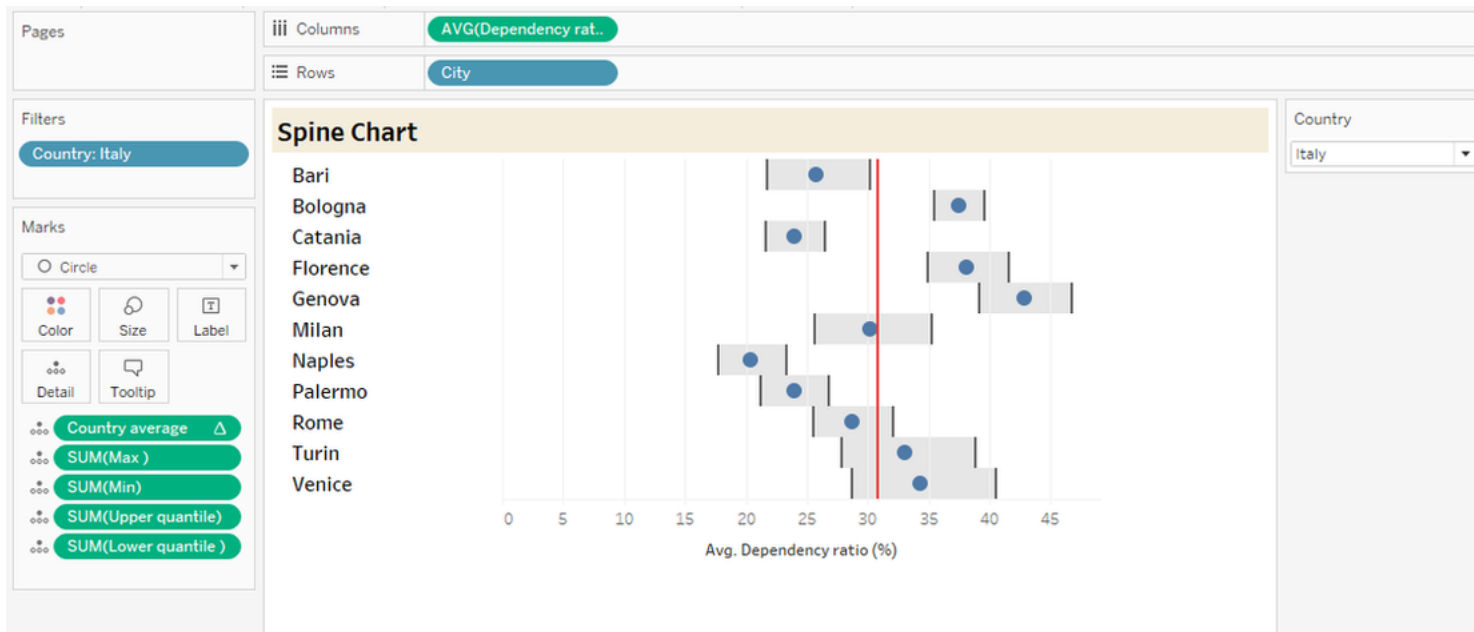Drag all the five calculations above to the detail shelf.

Right click on the axis to add the first reference line '**Countries average**' as follows;
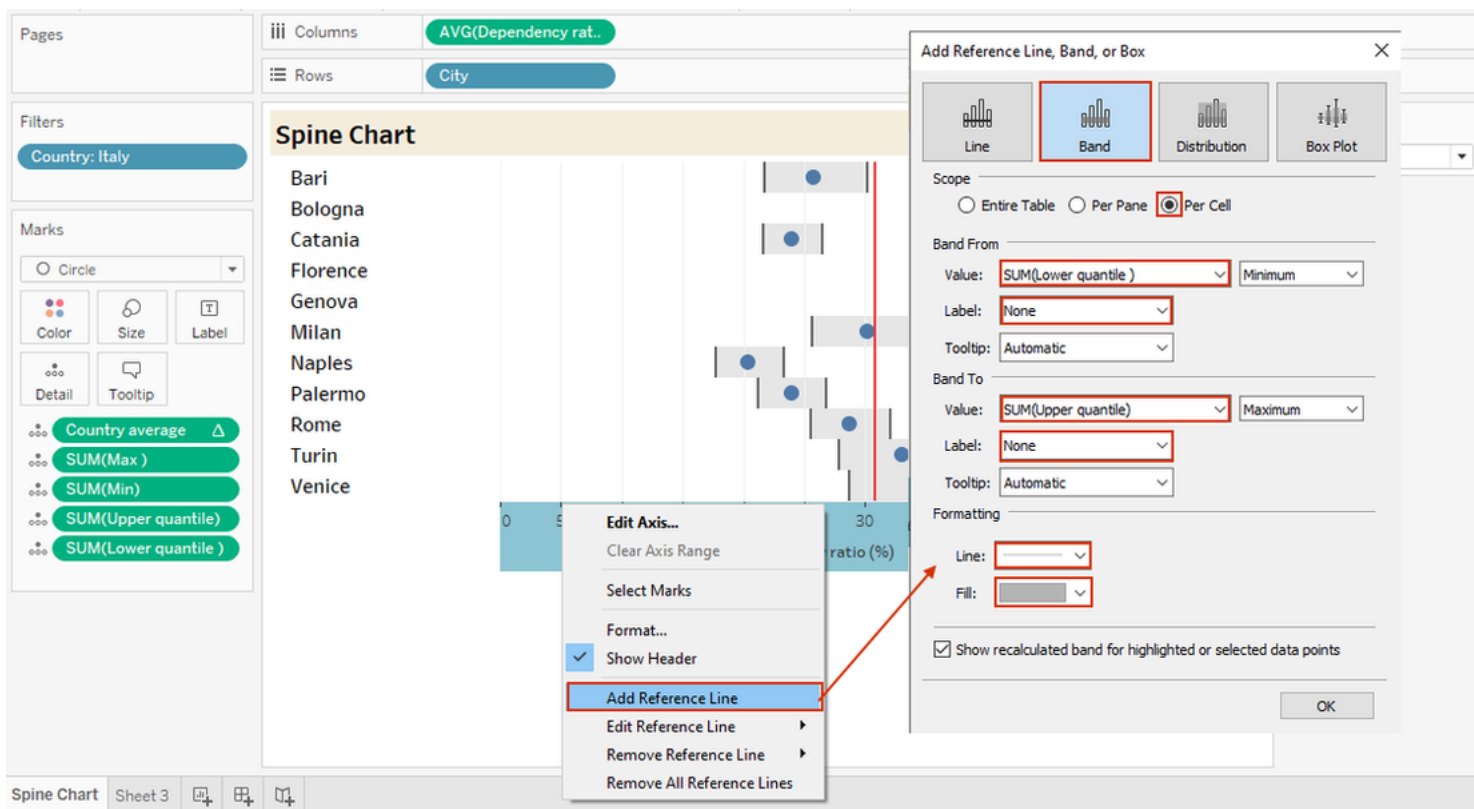
Next add a second reference line – inform of a band to show the **Min** and **Max** values

Executing this we've;

Adding the third reference line– inform of a band to show the **Upper** and **Lower** quantiles.

Color can be added to show significance of values being compared with the comparator. In this case, have used the following calculation to show cities whose average is above or below country's average.

KPI   ✕

```
if AVG([Dependency ratio (%)])<[Country average]
then 'Lower than countries average'
ELSEIF AVG([Dependency ratio (%)])>[Country average]
then 'Above countries average'
ELSE  'Same as countries average'
END
```
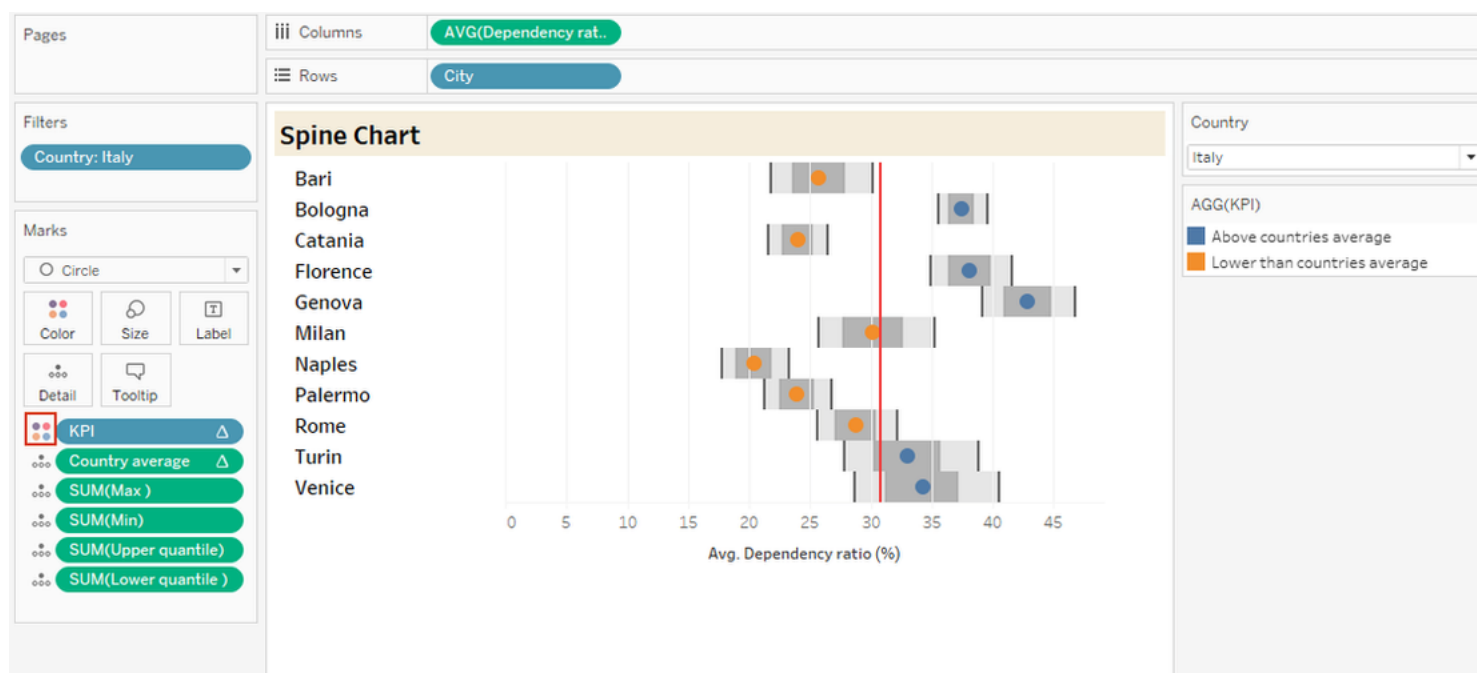
The calculation is valid.   1 Dependency ▾   Apply   OK

Adding this calculation to color shelf we've;

For more details, you can interact with the live dashboard embedded below.

Spine Chart

Filter

Country

About countries average

[✓Click to Show All Values]

Lower than countries average

[✓Search] [✓All Values in Hierarchy]   Avg. D..   Lower ..   Upper..

[✓Show Quick Filter Context Menu]

Japan

▼

| Anjo |
| Fukuoka |
| Fukuyama |
| Hamamatsu |
| Himeji |
| Hiroshima |
| Kagoshima |
| Kanazawa |
| Kitakyushu |
| Kochi |
| ~~Kofu~~ |
| Kumamoto |
| Kurashiki |
| Maebashi |
| Matsuyama |
| Mito |
| Nagano |
| Nagasaki |

I hope this post was helpful to you. To receive more of the Tableau tips and tricks kindly subscribe to our mailing list below.

Thanks for reading.