

Interactive Data Visualization in Tableau

Thank you so much for choosing to attend this workshop. The objective here is to get you started with some of the key concepts and techniques you'll need to begin creating interactive visualizations in Tableau.

- In this workshop we'll be looking at:
- The importance of Data Visualization
- Misleading Graphs (with real life examples)
- Introducing different data visualization tools
- Creating interactive visualizations in Tableau

There's a lot of information to cover in our session, so please put your phone or tablet in silent mode and feel free to ask your questions after the workshop.

Here's some social media information:

- Twitter & Instagram: @alexucimartinez
- Website: public.tableau.com/profile/alexandre.martinez
- Website: tinakorani.com

What is Data Visualization?

DATA VISUALIZATION IS A GENERAL TERM THAT DESCRIBES ANY EFFORT TO HELP PEOPLE UNDERSTAND THE SIGNIFICANCE OF DATA BY PLACING IT IN A VISUAL CONTEXT.

Data Visualization Tools

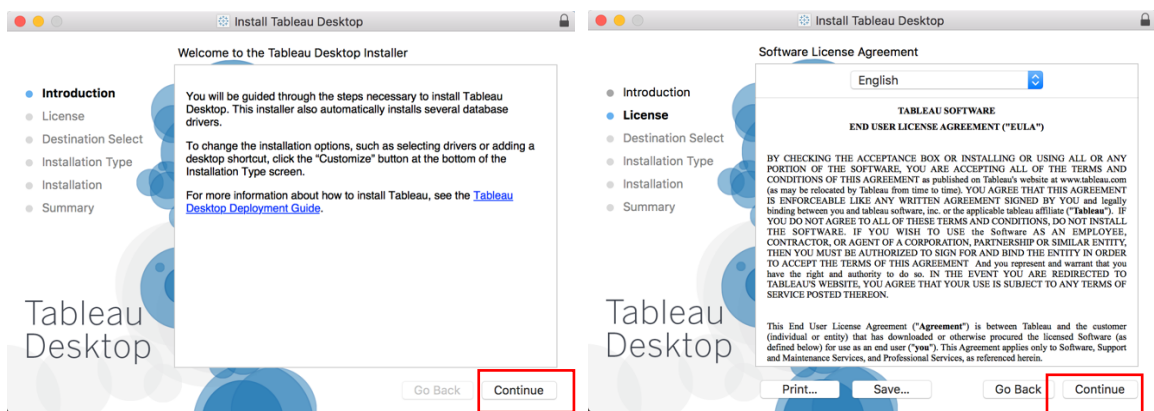
TABLEAU INFOGRAM CHARTBLOCKS DATAWRAPPER PLOTLY RAW
VISUAL.LY D3.JS EMBER CHARTS GOOGLE CHARTS CHART.JS POLYMAPS
EXCEL PROCESSING.JS

Misleading Graphs Realtime Examples:

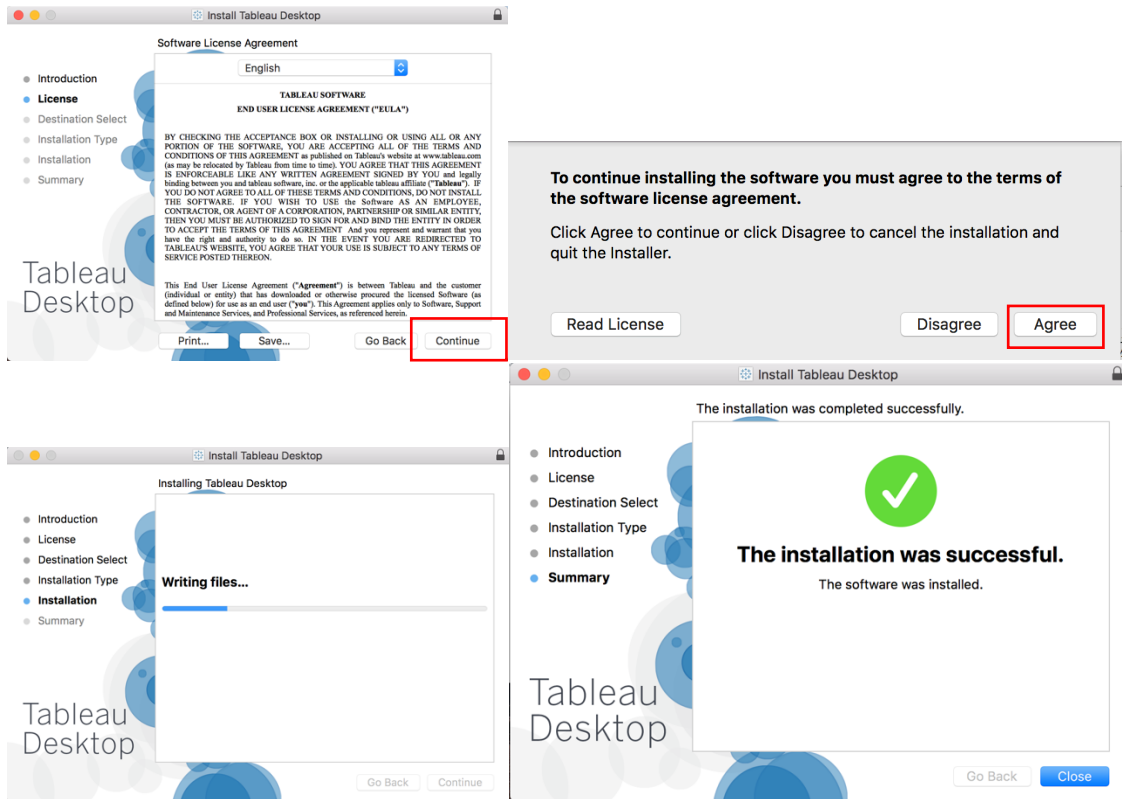
<https://www.statisticshowto.datasciencecentral.com/misleading-graphs/>

Tableau Installation

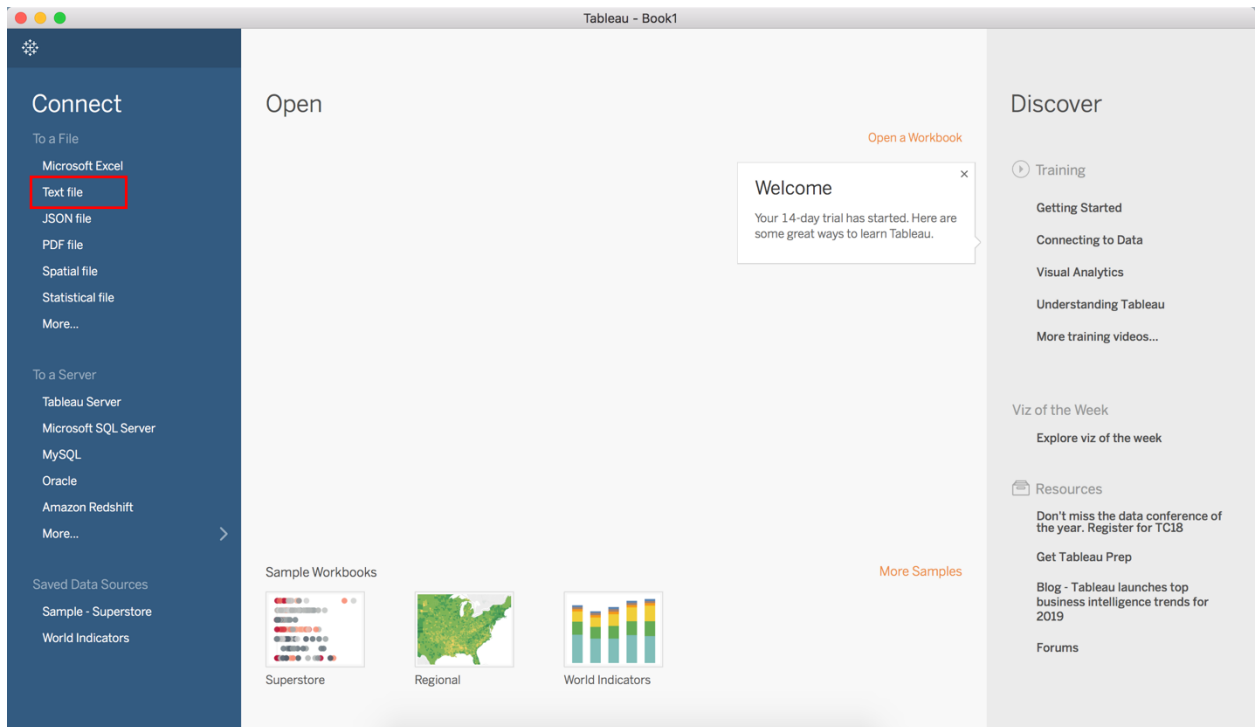
1. Download Tableau at <https://www.tableau.com/products/desktop/download>



Interactive Data Visualization in Tableau



Import Dataset from Excel .csv file



Connect to > Text File

Interactive Data Visualization in Tableau

The screenshot shows the Tableau Public interface with a data source named "Processed Data live births for Tina". The data is displayed in a table with the following structure:

#	Abc	Abc	#
Year	Sex	Age	Birth
2009	both sexes	-15	38
2010	both sexes	-15	25
2011	both sexes	-15	26
2012	both sexes	-15	26
2013	Both sexes	-15	21

Annotations in the image identify parts of the table:

- Data type (Numerical or Text):** Points to the header row containing symbols like # and Abc.
- Data header (Name):** Points to the second header row with column names: Year, Sex, Age, Birth.
- Data values:** Points to the rows of data below the headers.

The tab "Data Source" shows the data imported. We can double check that the importation didn't alter the data or change its format.

2. Click on sheet to create a graph and rename the tab "birthCount". On the Worksheet, we can see the dimensions (Tableau assigns the data that are categorical into the Dimensions area) and the Measures (Tableau assigns the other data into the Measures area).

The screenshot shows the Tableau Public interface with the "Data Source" tab selected. The "Dimensions" shelf contains the following fields:

- Abc Age
- Abc Sex
- # Year
- Abc Measure Names

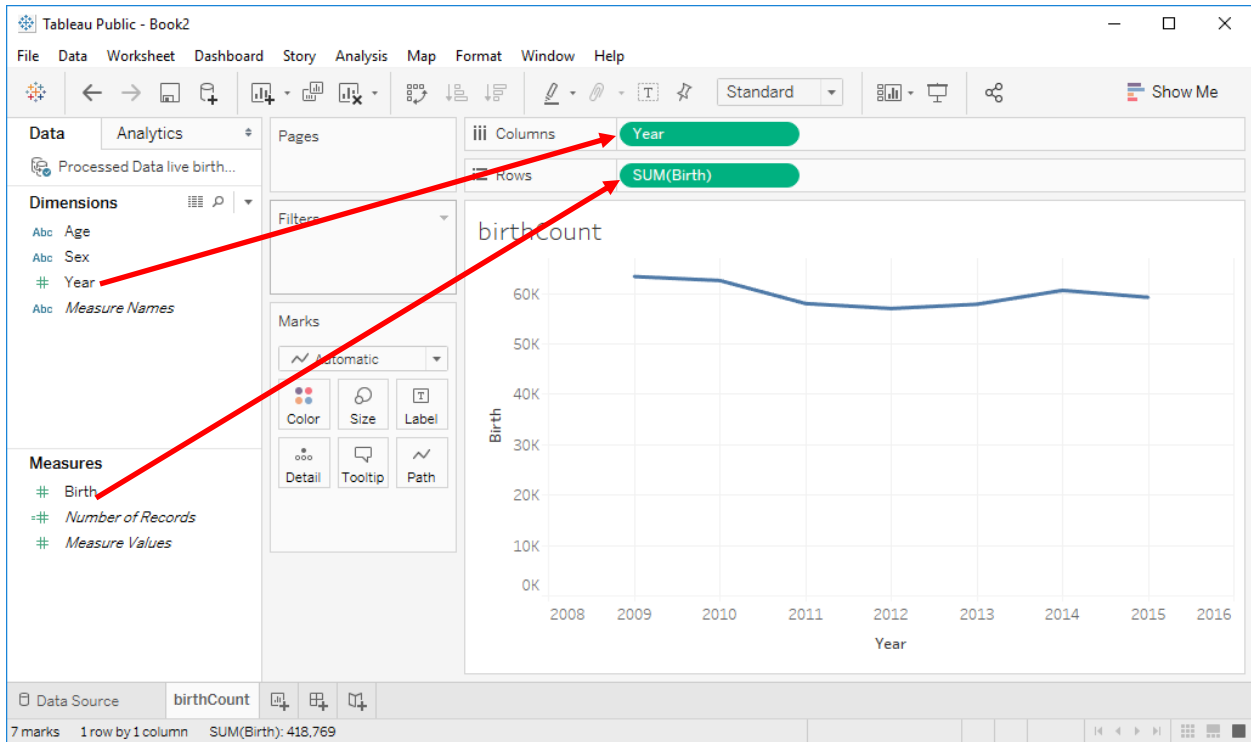
The "Measures" shelf contains the following fields:

- # Birth
- =# Number of Records
- # Measure Values

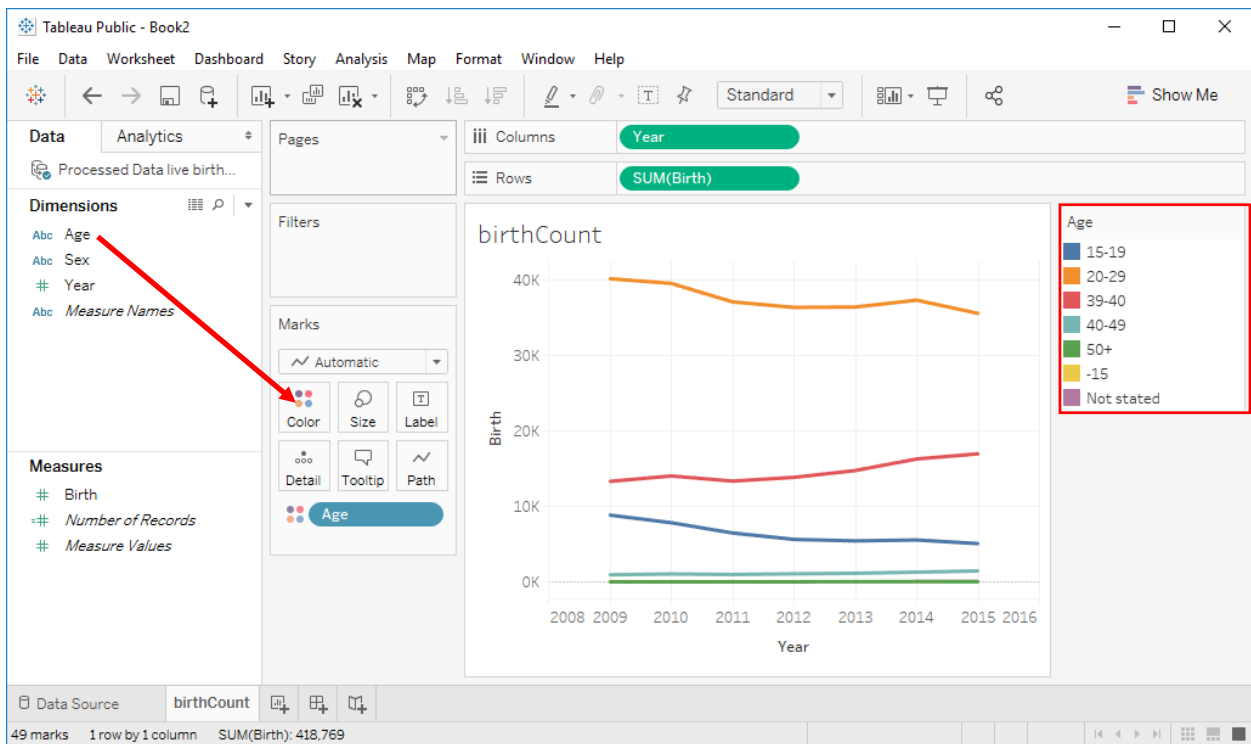
The main view shows a worksheet named "birthCount" with a grid for dropping fields. The "Columns" shelf is empty, and the "Rows" shelf is empty. The "Marks" shelf is set to "Automatic".

3. Now we can to create a graph of birth count over time. Drop the dimension Year on the column and the measure birth on the row.

Interactive Data Visualization in Tableau

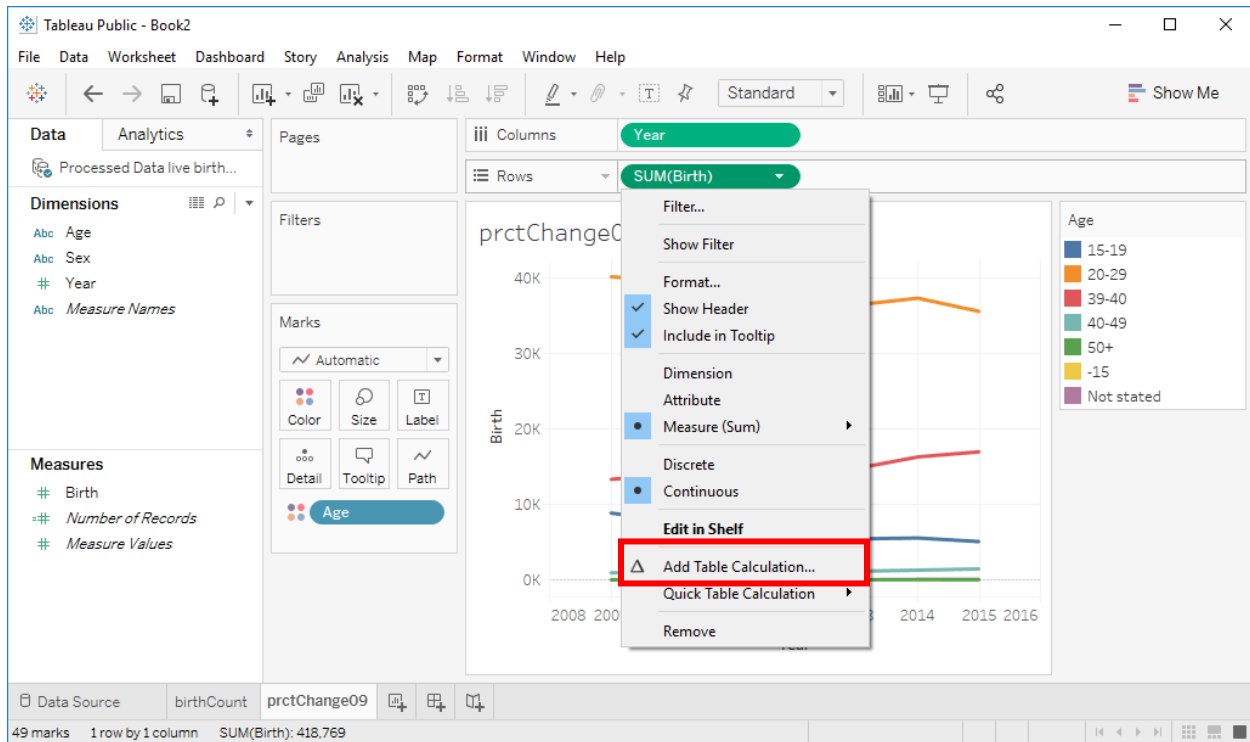


4. Now we want to have a graph for each age category: Drop the Age dimension into the color Marks.

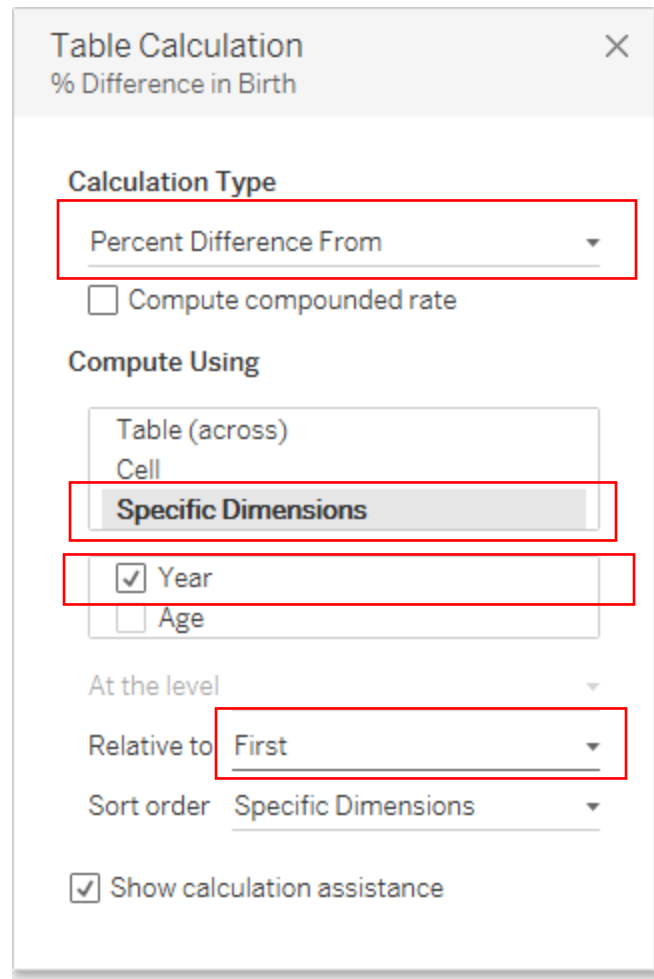


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- Now we can calculate the percentage change from 2009. We start by duplicating the tab to work on it and rename it to prctChange09.
- On this tab, we want to create a calculated table. Click on Birth and then “Add Table Calculation”.

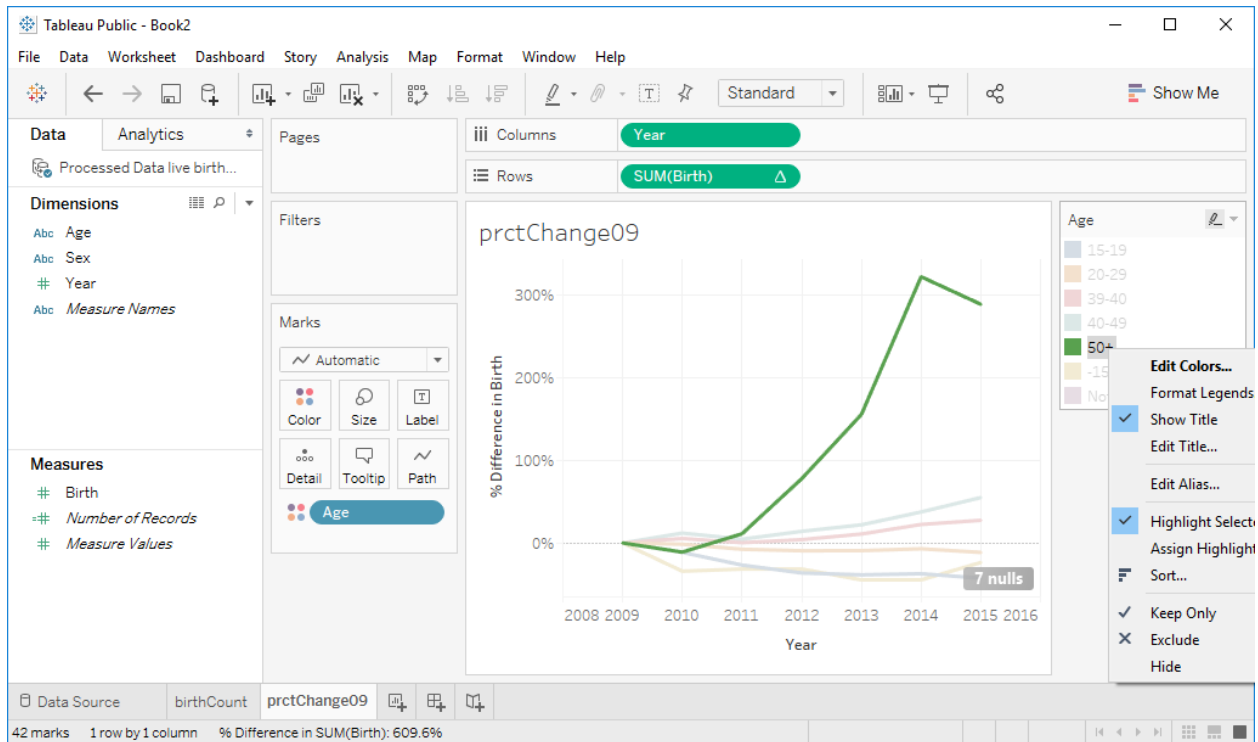


- Now we can calculate the percentage change from 2009. Select:
 - “Percent Difference From” as Calculation Type
 - “Specific Dimensions” as Compute Using
 - Year
 - “First” as relative to

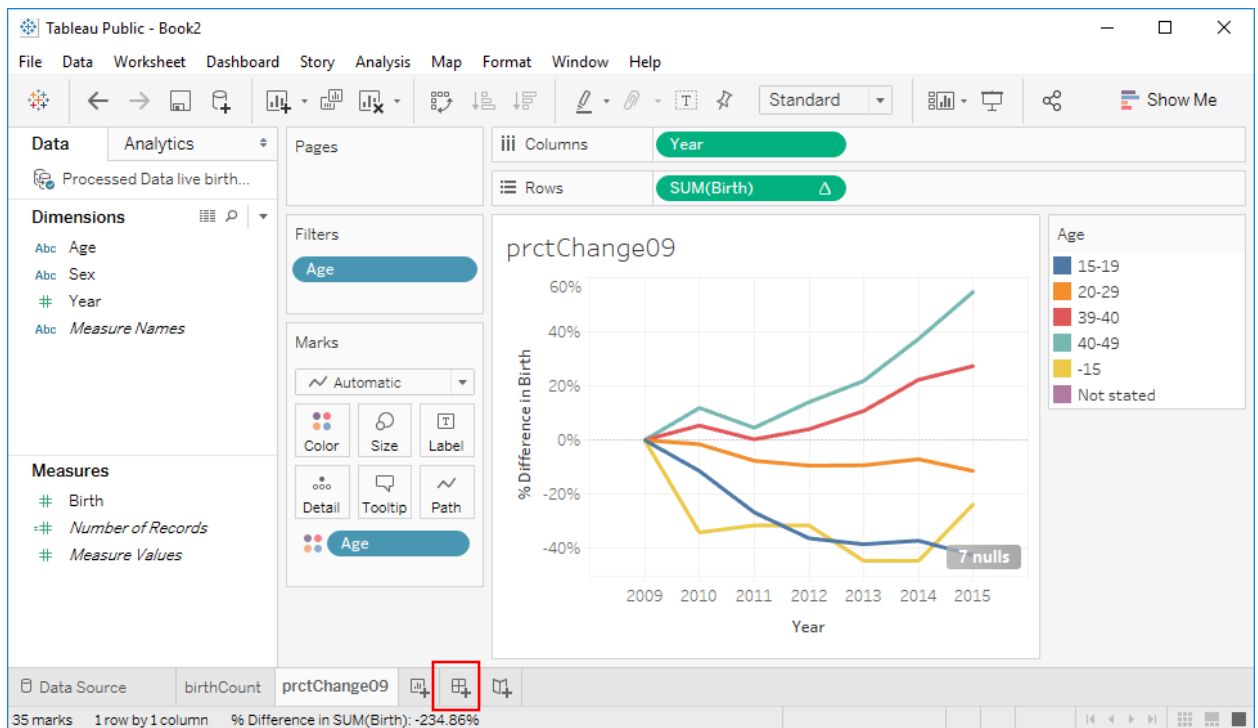


8. Now we have the final graph. The category 50+ has much higher values (300% change) than the other so we can't see the details of the other curves. We can right-click on 50+ in the legend area and exclude the 50+. Because there are few births in the 50+ category, the percentage change is higher. Imagine if you earn \$1000 and you have a salary raise of \$2000, it's 200% increase. But if you earn \$10,000 and you have the same salary raise, it's an increase of only 20%.

Interactive Data Visualization in Tableau



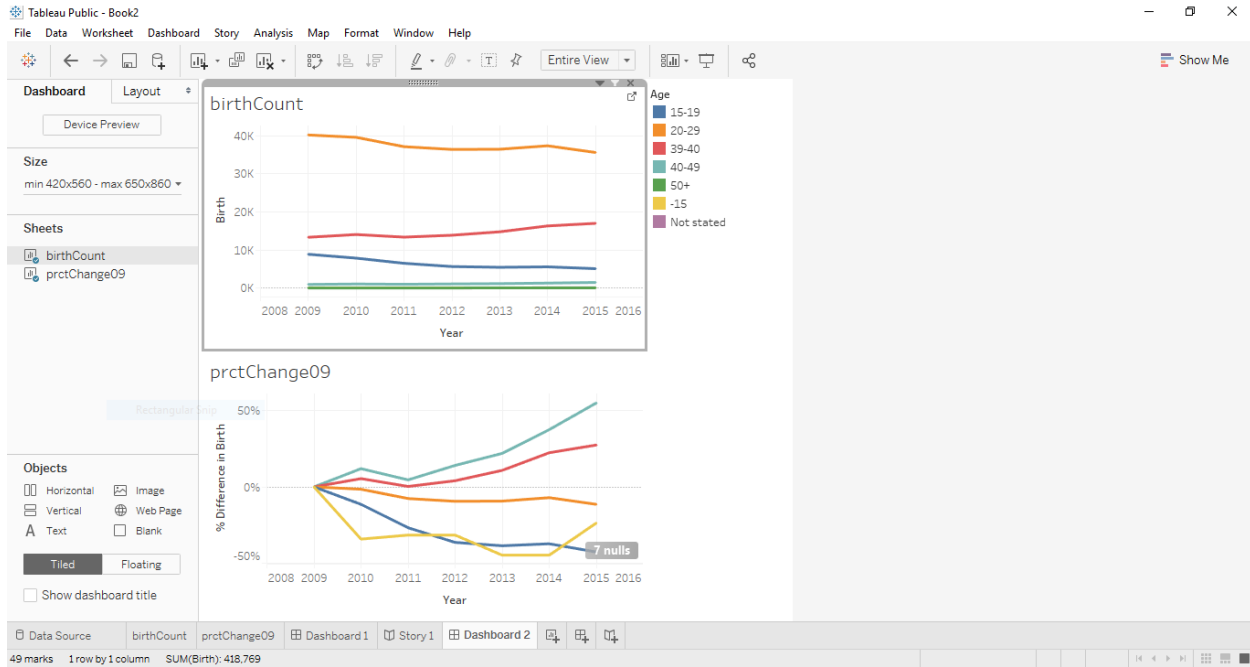
9. After the exclusion of 50+, we should have the following graph:



10. Now we can combine the two plots into the dashboard. Click on new dashboard.

On the dashboard, you can drag and drop the two worksheets just created to have them on only one page.

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11. You can also add a story. Click on new story and double-click on each worksheet that you want to add to the story.