**Viola Chart**

**What is it about:**

This chart is basically about the wealth distribution in US on various assets according to wealth quantile.

**Sheets used in Dashboard:**

* Viola Chart
* Header

**Data Densification:**

* In the given data, it is first pivoted in order to make data a way better than its previous version to play with in Tableau.
* Then the 2 column called Start Percent and End Percent is added to densify the data with simple logic that the percent for a quantile is consider as End Percent and the percent for previous quantile is considered as Start Percent and similarly for asset description.
* Quantile (Numeric column) is created just for our convenience.
* Then in order to densify the data, created a new column called ToPad for which data is duplicated and for one set ToPad column is given as 1 and 49 for the other. 49 is just a random number to make the curve smoother while creating bins.

**Table Calculations used:**

|  |  |
| --- | --- |
| t | (Index()-25)/4 |
| Table Start Percent | ZN(RUNNING\_AVG(SUM([Start Percent]))) |
| Table End Percent | ZN(RUNNING\_AVG(SUM([End Percent]))) |
| Sigmoid | 1/(1+EXP(1)^-[t]) |
| Curve | [Table Start Percentage]+([Table End Percentage]-[Table Start Percentage])\*[Sigmoid] |
| Label Type | IF [t]<=0 then WINDOW\_MIN(MIN([StartType]))else WINDOW\_MIN(MIN([End Type])) end |
| Percent Label | if [t]<=0 then [Table Start Percentage] else [Table End Percentage] END |

**Table Calculation usage:**

* T is just a function used to nicely represent the given data in a data densified tableau worksheet which main intention is to set range from -5 to 5.
* Table Start Percent is used to refer the overall average sum of start percentage.
* Table End Percent is used to refer the overall average sum of start percentage.
* Sigmoid is the function to make the negative to zero as it’s functionality.
* Curve is used to make smooth curve from Table start percent to table end percent. We add the subtracted value of table end percent and table start percent to table start percent to smoothen the curve using Sigmoid.
* Label Type is just to adjust the Label accordingly to the densified data.
* Percent Label is similar to Label Type which is used to adjust the percent according to the densified data.

**Hint:**

Data densified using padding technique.

**Reference:**

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