Dear Mike Bostock, Matthew Ericson, David Leonhardt and Bill Marsh,

While reading the New York Times, I came across the insightful article and associated visualization “Across U.S. Companies, Tax Rates Vary Greatly”, available at http://www.nytimes.com/interactive/2013/05/25/sunday-review/corporate-taxes.html. Currently I’m taking Prof. Shneiderman’s Information Visualization course at the University of Maryland and am writing to offer a critique of the visualization.

In reviewing the article I have considered several of, Prof. Shneiderman's "Eight Golden Rules of Interface Design". The strengths and weaknesses of the visualization are listed according to several pertinent design goals:

1. Strive for consistency – The interface could benefit from increased consistency. There are two buttons, one at the top labeled “The View by Industry” and one at the bottom labeled “Show Industries” that have identical functionality. The other controls for the visualization are at the top of the page, so I would recommend removing the “Show Industries” button at the bottom of the screen.

2. Error handling – The interface had strong error handling. The user is not allowed to make select an illegal configuration. For example, a user cannot select both views at once. Additionally, when the user searches for a company that is not listed, no errors appear. As expected, no companies are highlighted.

3. Permit easy reversal of actions – The controls do allow easy reversal of feedback. The search function highlights companies and when characters are removed, companies matching the search string are highlighted. A search for “APP” can be executed and when “APP” characters are deleted all bubbles go back to the original color.

4. Offer informative feedback – The interface reacted proportional to the user’s input. The interface changed substantially when one of the two views (Industry specific or Aggregate) were selected. The writer’s short sentence comments specific to a view changed. Smaller input like, hovering over companies’ circles produces a proportional amount of output; a box noting the companies’ name, tax percentage, total taxes paid and total earnings.

5. Data set reduction and filtering - The visualization could have benefited from more sophisticated searches. For example, it would be interesting to search for companies with greater than $5 billion in revenue. Perhaps zoom functionality could be used to show a range of tax percentages.

6. Spatial organization – The spatial layout of the data was very good. The companies were sorted along the x-axis by percentage of taxes paid. When the data was separated by industries, the industries were sorted vertically based on the average taxes that they paid. This made it especially easy to see the variance in taxes paid among companies and among industries.

The visualization was viewed on a 15 inch widescreen laptop with Internet Explorer 9 and on an iPad with a Safari browser. In both browsers, the visualization looked identical. The visualization scaled down to the smaller iPad screen. Additionally, the visualization was readable in the different screen orientations. The interface’s search functionality was cumbersome on the iPad due to difficulty with typing. To assist iPad and other mobile users, typing could be avoided
by offering an alternative search function where popular or outlying could be selected by check boxes.

Concluding, I have found this visualization particularly insightful. I hope that my suggestions will be used to improve future visualizations.

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