Dear Visualization Designers,

For an assignment in my Information Visualization course, I wrote a formal critique of the [corporate tax rate visualization](https://www.nytimes.com/interactive/2013/05/25/us/corporate-tax-rate-infographic.html) you have published on May 25, 2013, on the New York Times website. The critique is heavily guided by Dr. Shneiderman's Eight Golden Rules for visualization design, and divided into sections drawing on each rule and a section for overall conclusions at the end. Each section provides a rather subjective rating for how well the visualization conforms to the particular rule discussed in the section, and a verbal justification for it.

**Consistency**

There are two ways one can evaluate this interactive infographic for consistency: (1) how consistent is it within its own boundaries and (2) how well does it fit within the general design of the website and other visualizations therein. The same color grade is maintained vertically in both the overview and view by industry. Soft pastel colors are used for the data display and graphics, which is consistent with other graphics on the website.

What is a bit puzzling is the exact choice of the color scale used to show the tax rate. The darker choices for the endpoints are explicable: darkness implies extremity. However, color choice for the N/A category is confusing: if it falls off the tax-rate scale, it should use a color that also falls off the color grade, such as light red.

Serif black typeface from Georgia / Times New Roman family is used for the overhead description and title, while headers and individual industry descriptions to the left and captions within the SVG graphic are done in default sans-serif, again, consistent both internally and throughout the site. Labels are clear and their placement is unobtrusive.

**Accessibility**

The color grading parallels data-points' positions along the abscissa, therefore, while visually attractive, is not strictly necessary to glean the meaning of the graphics, making the visualization more accessible to people with color disorders. Another plus is the consideration for people with impaired eyesight: when a particular company is searched for and highlighted, the color grade's transparency is set to increase, allowing to find the selected data point with the dark black outline more easily.

Government usability guidelines call for a 12-pt font minimum, which is clearly violated by the website as a whole, but the visualization and website both scale very well in most browsers using standard zoom features, effectively mitigating the problem.

The visualization is also fairly navigable without the use of a mouse, allowing viewing for people limited to or preferring keyboard-only interaction. While it is not clear how a blind person could view the whole picture without any special technology, but perhaps a good screen reader would be able to pick up on the emerging callouts after each search.

**Feedback**

A definite plus, the animation transitions make it obvious how the user's view of the data is changing from the overview to the industry groups. It is also relatively helpful to alphabetically highlight multiple matching companies as the user types in more letters into the search bar. However, when the typed name of
a company is either misspelled or not in the S&P 500 list altogether, there is no way for the user to know that his search yielded no results. The pastel colors stay washed-out as in the case of a successful highlight, while the view by industry can be fairly long vertically, calling for scrolling, especially on small mobile device and laptop screens. The user has to scroll through just to find out he or she did not highlight anything. It would be useful if the text field would display that validation was failed somehow, e.g. a thin red outline appears around the invalid field, and a callout explaining that no results were found if the user's cursor hovers over it.

3.5/5

Error Prevention &
There really aren't many places here where errors could be made, but auto-completion / search suggestions for company names in the search field would help to prevent typos & incorrect company names, helping to avoid the lack-of-feedback case mentioned earlier.

4.5/5

Action Reversal
The controls are fairly simple and straightforward, and it is clear how to get back to the earlier state in every case.

Undo is not really necessary to switch between overview/industry breakdown, although I would argue to parallelize the redundancy of the “show by industry” button to a “show overview” button at the bottom of the industry view, since the top “mode” controls aren't typically aren't visible when a user scrolls all the way down.

4.5/5

Locus of Control
Throughout my experience with this infographic, I felt like I was in control rather than being guided, which is a good thing.

5/5

User's Memory Load
The short-term memory load for this program is minimal, as almost all the information is present on the screen. The only place where I actually had to go back-and-forth was when I was comparing the averages for individual companies to the overall average, which wasn't hard.

5/5
Conclusion

With the rules weighted equally, this visualization gets a solid 4.5 out of 5 stars. It effectively communicates the high spread of the overall corporate tax rates, who gets to shoulder the most and who the least, and pinpoints the anomalies to the overall pattern.

That being said, some things do remain a bit unclear. For instance, the Insurance sector's average is said to be swayed by AIG – which falls off the scale on the right end... If it's rate could not be computed at all, how can it actually sway the average? Is it counted as 100%? If so, why is it color-coded differently?

What the infographic doesn't do quite so effectively is explain all the reasons. It focuses on the “what” rather than the “why.” It would do a world of difference if, for instance, NY Times articles about individual companies (from within a reasonable time-frame) would somehow be accessible through the data-points. That alone would keep me interested in exploring more than a few minutes.

4.5/5

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