Paper data visualization

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The visualization visualizes the dataset of the national unemployment rate, the job losses and job gains from 2006 till 2015. The visualization gives a clear overview of all the data of every month. Also it will show the national unemployment of the entire nation throughout 19648-2015. This is very nice because you can also select different options like race or gender. It is also well combined with the Recessions so you can clearly see the link between a recession and an increase in unemployment.

The labels are overall really good but at the first graph you have the labels on the y-axis that says: sectors rising/sectors falling. This does not give clear info because in what sorts are the sectors falling or rising? It should say the amount of sectors rising/falling this would be way clearer.

The data ink ratio is clearly maximized since it does only use 2d presentation of the data and because the data cannot be visualized with less color. The data variation is very good because you can select many different options in the lower graph which shows the overall unemployment.

By using contrast you can see clear data connection between the sector. By hovering over the first graph you can see black circles when hovering over a certain sector. This is a good way to show the data because you first change the form from a rectangle to a circle and then change the fill to black which makes sure it clearly pops out of the context [1]. Also by using the color with combination of the tone you can see clear differences. The chosen colors are not very good because red and green cannot be easily separated by color blind people. As described in an article it is known that about 10% of the male population has color blindness and because of this big amount they cannot be excluded [2]. I personally think the color blue would be better because this can be seen by almost everyone. In the first graph it is very strange color choice because higher than 5 percent is blue instead of dark green. I think this has to be dark green instead of blue because dark green would still be clear to reed just as dark red is still good readable when it goes into negative percentage. When you look at the last graph and you select black as filter everything will turn red. But it is not clear anymore what the difference between the months is because 18% and 10% get the same color. It is better to change the color for this case because this only shows that the black are overall much unemployed but not the difference for a recession.

In the last graph it is really good that it is shown when there was a recession. Then by selecting recession in the graph before you can really link the two graphs together. It is not necessary to hide recession in the graph because when the dots are present you can still see the pattern.

The alignment is very good except for the first graph. Here you see different dots that connect to each other when hovering over. But when you want to compare these dots the one left or right to it can be 4% higher in unemployment change than the one left to it or itself.

The proximity is done really badly because when you select a sector in the second graph and it is one of the lowest you will not see the black circles in the graph above it because it is not in range. This is a huge bug and is really bad! I would improve this by splitting the bar chart in two and then showing these two bar charts next to each other so you can see what happens in the first graph. It is also very good that the color is also adjusted in the bar in the bar chart. This gives a really good effect because now you can see clearly how the month was in percentages in one click without hovering over each variable. However the time does not change when you select a certain month in the first graph. This makes looking at a specific month really hard because you have to count, for instance to get the data of July 2015.

If you look at the last graph you can select different groups. When you do this it changes the line graph and you can see clear difference between the lines. This visual encoding is really good because changing a line to blue really jumps out of the graph. By still showing the rest of the lines you can still compare it to the other groups of the subject. But when you hover over the data shown is so big that you cannot look at the rest of the line where the data is shown. I think it would be better to show the data at the top because than you still have a view over the whole graph or you can make it see through so you would still see the line through the data shown. When selecting some groups it is shown that no data is available and it also hides it when all the data is shown in the graphic. I think this is a really good solution for when you have certain groups with full data sets and some with less complete data. This because it will not give a confusion when only looking at a full graph and still showing the mark for unavailable data.

Overall the visualization shows the data clearly and you can spot trends very good. It is really bad that there is a bug in the visualization so that it does not change the month when selected. Besides that and the big data shown in the last graph that hides an eight of the line I think it is a really good visualization that clearly gives a good insight in the unemployment of the country.

[1] S. Carpendale, “[Considering Visual Variables as a Basis for Information Visualisation](http://cdn.mprog.nl/dataviz/excerpts/w2/Carpendale_Considering_Visual_Variables.pdf)”.

[2] D. Borland and R. M. Taylor II, “[Rainbow Color Map (Still) Considered Harmful](http://cdn.mprog.nl/dataviz/excerpts/w4/Borland_Rainbow_Color_Map.pdf)”, IEEE Computer Graphics and Applications, vol. 27, no. 2, pp. 14–17, 2007.